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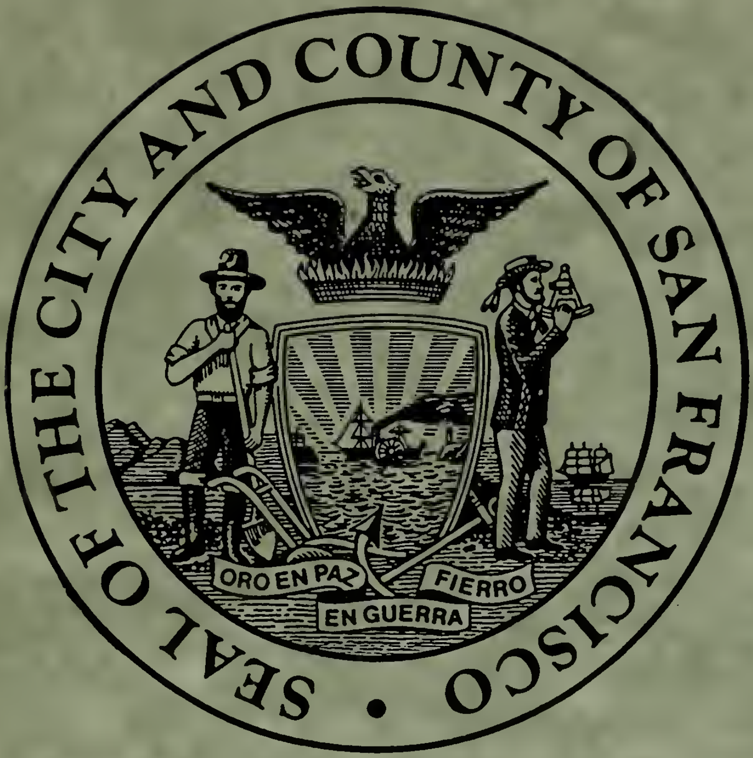
SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO
ORO EN PAZ
FIERRO
EN GUERRA

ANNUAL REPORT

July 1, 1996 - June 30, 1997

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Boyd G. Stephens, M.D.
Chief Medical Examiner
850 Bryant Street
San Francisco, California 94103

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MEDICAL EXAMINER'S OFFICE
City and County of San Francisco, California

ANNUAL REPORT
July 1, 1996 - June 30, 1997

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Boyd G. Stephens, M.D.
Chief Medical Examiner

y and County of San Francisco **Chief Medical Examiner**

March, 1998

The Honorable Willie L. Brown, Jr., Mayor
The Honorable Board of Supervisors
Director of Administrative Services
City and County of San Francisco
San Francisco, CA 94102

Dear Mayor Brown, Honorable Supervisors and Director of Administrative Services:

The attached Annual Report covers the fiscal year 1996-97. This has been an eventful year for the Medical Examiner's Office. The Peace Officers Standardized Training Program (POST) was finalized with all investigative staff being sworn and either starting through or completing their initial aspects of POST training. A cultural diversity, sensitivity and awareness program was established and members of the department were given training.

Since the last budget year, we have been able to procure some additional equipment and computerization capabilities through state mandate money. The computerization and data management has allowed an earlier production release of the Annual Report as well as markedly improving data management, interpretation and inventory control of evidence and supplies.

Disaster training and planning for eventualities related to Weapons of Mass Destruction and other disaster events has been ongoing. The staff has worked hard overcoming considerable limitations in many areas. The office, however, has continued to meet its legal and medical responsibilities throughout the fiscal year. The department's mission is still to perform excellent quality forensic medicine for the benefit of the citizens of the City and County of San Francisco and this will continue to be our goal in future years.

Sincerely,

Boyd G. Stephens, M.D.
Chief Medical Examiner

553-1694 **Hall of Justice, 850 Bryant Street** **San Francisco, CA 94103**
ACCREDITED NATIONAL ASSOCIATION OF MEDICAL EXAMINERS

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TABLE IV. MANNER OF DEATH BY SEX

Manner of Death

Sex	ACC	HOM	SUI	NC	VEH*	SIDS**	UND	TOTALS
Male	202	50	104	654	38	3	28	1,079
Female	81	13	35	371	18	5	16	539
Unknown	0	0	0	1	0	0	0	1
TOTALS	**283**	**63**	**139**	**1,026**	**56**	**8**	**44**	**1,619**

* = Vehicular deaths. These include 11 cases ruled to be homicide, 43 ruled to be accidental, 1 ruled to be suicide, and 1 with mode undetermined.

** = Includes 8 SIDS (Sudden Infant Death Syndrome) deaths

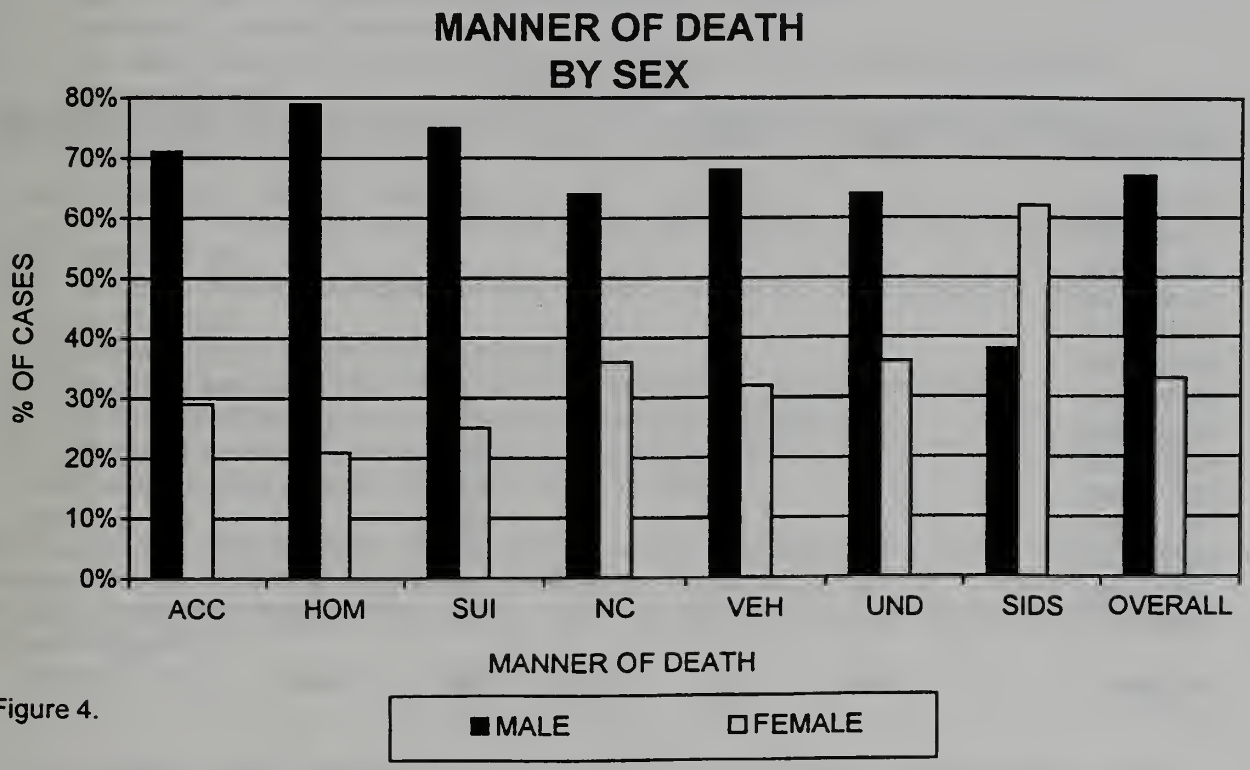


Figure 4.

TABLE II. MANNER OF DEATH BY RACE

Manner of Death

Race	ACC	HOM	SUI	NC	VEH*	SIDS**	UND	TOTALS
White	196 (69%)	25 (40%)	108 (78%)	697 (68%)	37 (66%)	3 (38%)	23 (52%)	1,089 (67%)
Black	58 (20%)	31 (49%)	8 (6%)	176 (17%)	8 (14%)	4 (50%)	12 (27%)	297 (18%)
Asian	24 (8%)	4 (6%)	22 (16%)	131 (13%)	11 (20%)	0 (0%)	8 (18%)	200 (12%)
Other / Unknown	5 (2%)	3 (4%)	1 (0.7%)	22 (2%)	0 (0%)	1 (12%)	1 (2%)	33 (2%)
TOTALS	**283**	**63**	**139**	**1,026**	**56**	**8**	**44**	**1,619**

TABLE III. MANNER OF DEATH BY AGE

Manner of Death

Age Group	ACC	HOM	SUI	NC	VEH *	UND	TOTALS
0-11 months	0	1	0	**16	0	3	20
1-5 years	4	0	0	1	1	0	6
6-12 years	0	0	0	0	1	0	1
13-16 years	2	0	2	0	1	0	5
17-19 years	3	4	4	1	4	1	17
20-29 years	19	22	22	10	14	4	91
30-39 years	68	18	28	44	7	9	174
40-49 years	84	9	35	122	13	15	278
50-59 years	28	5	11	128	7	8	187
60-69 years	22	2	7	187	3	1	222
70-79 years	19	2	16	235	2	0	274
80-89 years	25	0	9	210	3	2	249
90 + years	9	0	5	76	0	0	90
Unknown	0	0	0	4	0	1	5
TOTALS	**283**	**63**	**139**	**1,034**	**56**	**44**	**1,619**

* VEH = Vehicular deaths. These include 11 deaths ruled to be homicide, 43 cases ruled to be accidental, 1 ruled to be suicide, and 1 with mode undetermined.

** Includes 8 SIDS (Sudden Infant Death Syndrome) deaths

INTRODUCTION

The **Medical Examiner** is appointed by law to many responsibilities, the foremost of which is the investigation and certification of a variety of deaths including all deaths of other than natural causation, and any apparently natural deaths in which no physician can reasonably state the cause. The Medical Examiner can utilize any and all medico-legal investigative techniques, including autopsy, to establish both the medical cause of death, and mode or circumstances of death (natural, accident, homicide, suicide or undetermined).

The deaths which must be reported to the Medical Examiner, as required by various sections of the Government, Health and Safety and Penal codes, are as follows:

1. Homicide - known or suspected
2. Suicide - known or suspected
3. Following accident or injury (whether the accident or injury is the primary cause or contributory, with death occurring immediately or at some remote time)
4. Medical attendance of less than 20 days
5. No physician in attendance
6. Physician unable to state the cause of death (must be unable, not merely unwilling)
7. Poisoning (food, chemical, drug, therapeutic agents)
8. Occupational or industrial deaths
9. All deaths where a patient has not fully recovered from an anesthetic, whether in surgery, recovery room, or elsewhere
10. All deaths in operating rooms
11. All solitary deaths (unattended by physicians or other person in the period immediately preceding death)
12. All deaths in which the patient is comatose throughout the period of the physician's attendance
13. All deaths of unidentified persons
14. All deaths in which there are grounds to suspect that the death occurred in any degree from a criminal act
15. All deaths involving contagious disease - known or suspected - and constituting a public health hazard
16. Deaths in prison or while under sentence
17. All deaths associated with a rape - known or alleged - or crime against nature
18. All deaths related to or following abortion - known or suspected
19. All deaths involving drowning, fire, hanging, gunshot, stabbing, cutting, starvation, exposure, alcoholism, drug addiction, strangulation or aspiration

Additional mandated responsibilities include protecting and safekeeping of property belonging to deceased individuals, conducting inquests when indicated, maintaining proper public records, making reports to other agencies, identification of deceased persons, interment of indigent dead, and many other death related activities.

MEDICAL EXAMINER CASES FOR 1996-97

TABLE I. MANNER OF DEATH - MONTHLY COMPARISON

	Manner of Death							
Month of Death	**ACC**	**HOM**	**SUI**	**NC**	**VEH***	**SIDS****	**UND**	**TOTALS**
July	24	6	11	72	5	0	2	120
August	30	3	15	103	9	0	2	162
September	22	9	12	75	4	2	3	127
October	32	3	13	76	5	2	4	135
November	22	7	18	90	4	0	4	145
December	22	10	6	96	6	1	3	144
January	26	2	9	101	2	0	4	144
February	17	8	10	89	4	0	4	132
March	22	3	14	89	1	0	3	132
April	20	4	9	71	3	1	3	111
May	24	3	12	86	9	0	8	142
June	22	5	10	78	4	2	4	125
TOTALS	**283**	**63**	**139**	**1,026**	**56**	**8**	**44**	**1,619**

* = Vehicular Death. These include 11 deaths ruled to be homicide, 43 cases ruled to be accidental, 1 ruled to be suicide, and 1 with mode undetermined.

** = Sudden Infant Death Syndrome

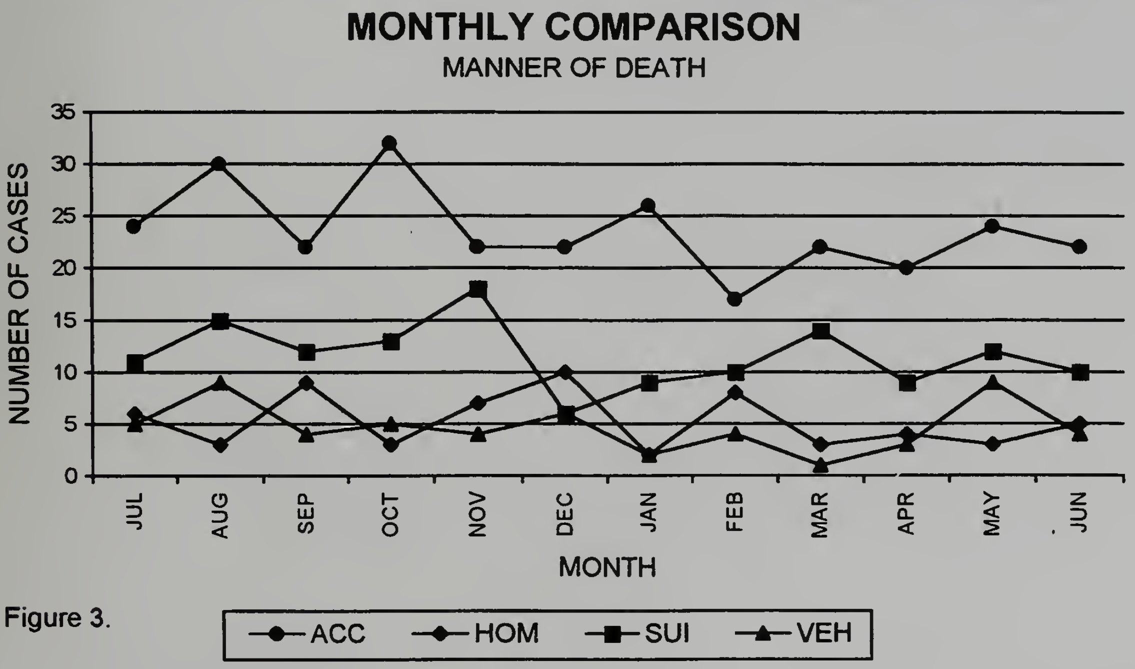


Figure 3.

MEDICAL EXAMINER CASES

FISCAL YEAR 1996-97

In fiscal year 1996-97, there were 7,180 deaths in San Francisco County. Of these deaths, 4,370 were reported to the San Francisco Medical Examiner's Office. The Medical Examiner's Investigators examined the previous medical history, circumstances surrounding the deaths and, in many cases, the scene of the death, and determined that 1,619 of these deaths came under the jurisdiction of this office. (See Figure 1, page 8). Full or partial autopsies or external examinations were performed on all cases.

1. The highest total **number of deaths** occurred in August, 1996. The highest number for the various manners of death occurred during other months (e.g., highest number of homicides in December 1996, suicides in November 1996, the highest numbers of vehicular deaths in August 1996 and May 1997, and non-vehicular accidents in October 1996). See Table I and Figure 3, page 12.

2. The **racial distribution** for each manner of death was quite variable. For example, the value of the ratio of whites/blacks was 3.7 overall, 3.4 for accidents, 13.5 for suicides (as compared to 27.8 for 1989-90 and 13.4 for 1992-93) and 0.8 for homicides. See Table II, page 13 and Figure 5, Page 15.

3. The **age range distribution** for each manner of death was also variable. For example, the highest number of accidental deaths and suicides occurred in the 40-49 year age group, the highest number of homicides and the highest number of vehicular deaths occurred in the 20-29 year age group. See Table III, page 13.

4. The **overall distribution** of deaths by sex (ratio of male/female) was 2.0, but this varied by manner of death from 1.8 in deaths due to natural causes to 5.5 in suicide deaths. See Table IV and Figure 4, page 14.

EXAMINATIONS AND REFERRALS

FISCAL YEAR 1996-97

Examinations

Suspected child abuse	2

Specimens submitted for toxicology testing from living individuals

Living victims or defendants in violent crimes	65
Management control - other City departments	307
DUI suspects	701

FISCAL YEAR 1996-97

Total Deaths in County	7,180
Total Deaths Reported to Medical Examiner	4,370
Cases Reported, Investigated and Cleared by the Medical Examiner for physician's signature	2,751
Medical Examiner's Cases	1,619

% County Deaths Reported to Medical Examiner	60.9 %
% County Deaths Having Medical Examiner's Jurisdiction	22.5 %

Cases Accepted by the Medical Examiner (by manner of death) *

1. Natural Deaths (NC)	1,026	(63.4%)
2. Accidents (ACC)	283	(17.5%)
3. Suicides (SUI)	139	(8.6%)
4. Homicides (HOM)	63	(3.9%)
5. Mode Undetermined (UND)	44	(2.7%)
6. Sudden Infant Death Syndrome (SIDS)	8	(0.5%)
7. Vehicular (VEH)	56	(3.5%)

Autopsy Index

Full Autopsy	62%
Partial Autopsy / External Examination / Record Review **	38%

Dispositions Authorized by the Medical Examiner

1. Indigents and fetus dispositions	189
Adults - 185	
Infants - 4	
2. Cases buried by funeral home with Public Administrator-controlled funds	47

Inquests Held or Depositions Taken	25

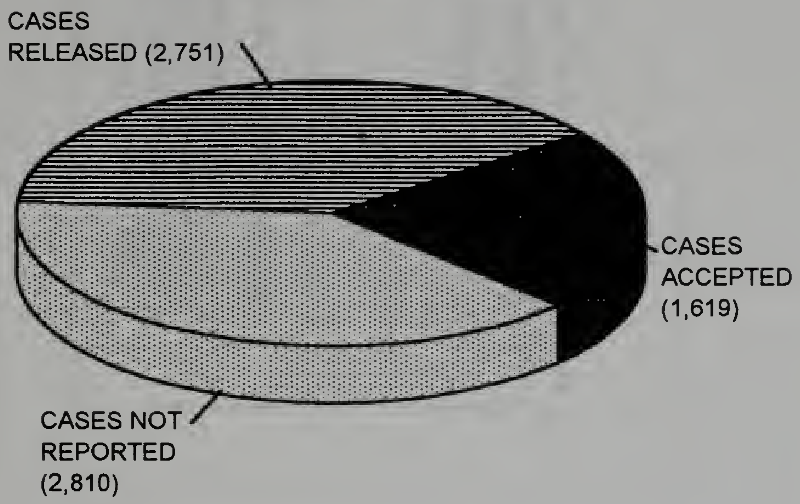
Identification

1. Persons brought to Medical Examiner's Office with insufficient identification	166
2. Persons subsequently identified by fingerprints, dental X-rays or other means	165
3. Persons interred as unidentified	1
4. Fingerprints taken and forwarded to FBI, CII, or SFPD	1,700

* The abbreviations following each manner of death will be used in most tables in this report.

** Includes 80 indigent cases all of whom were externally examined by a Medical Examiner's Investigator

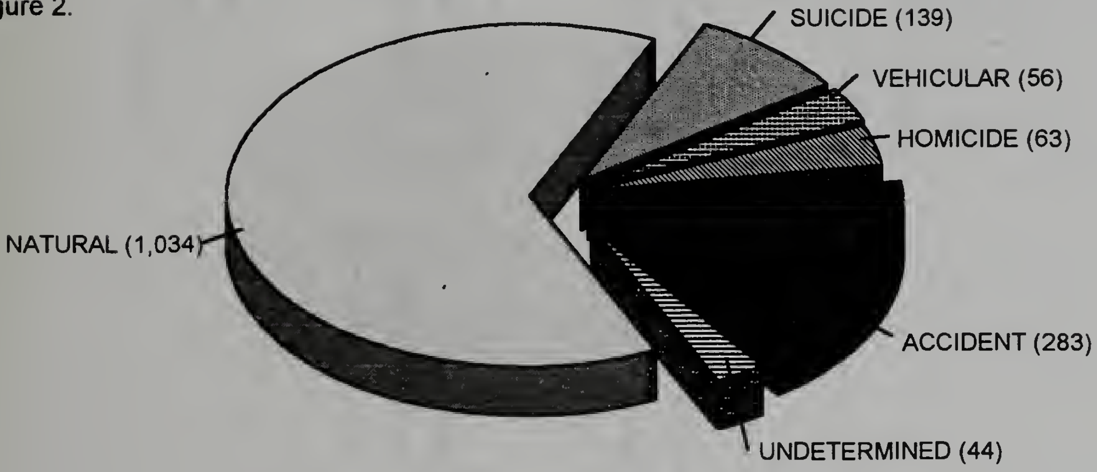
Figure 1.



COUNTY DEATHS

FISCAL YEAR 1996-97

Figure 2.



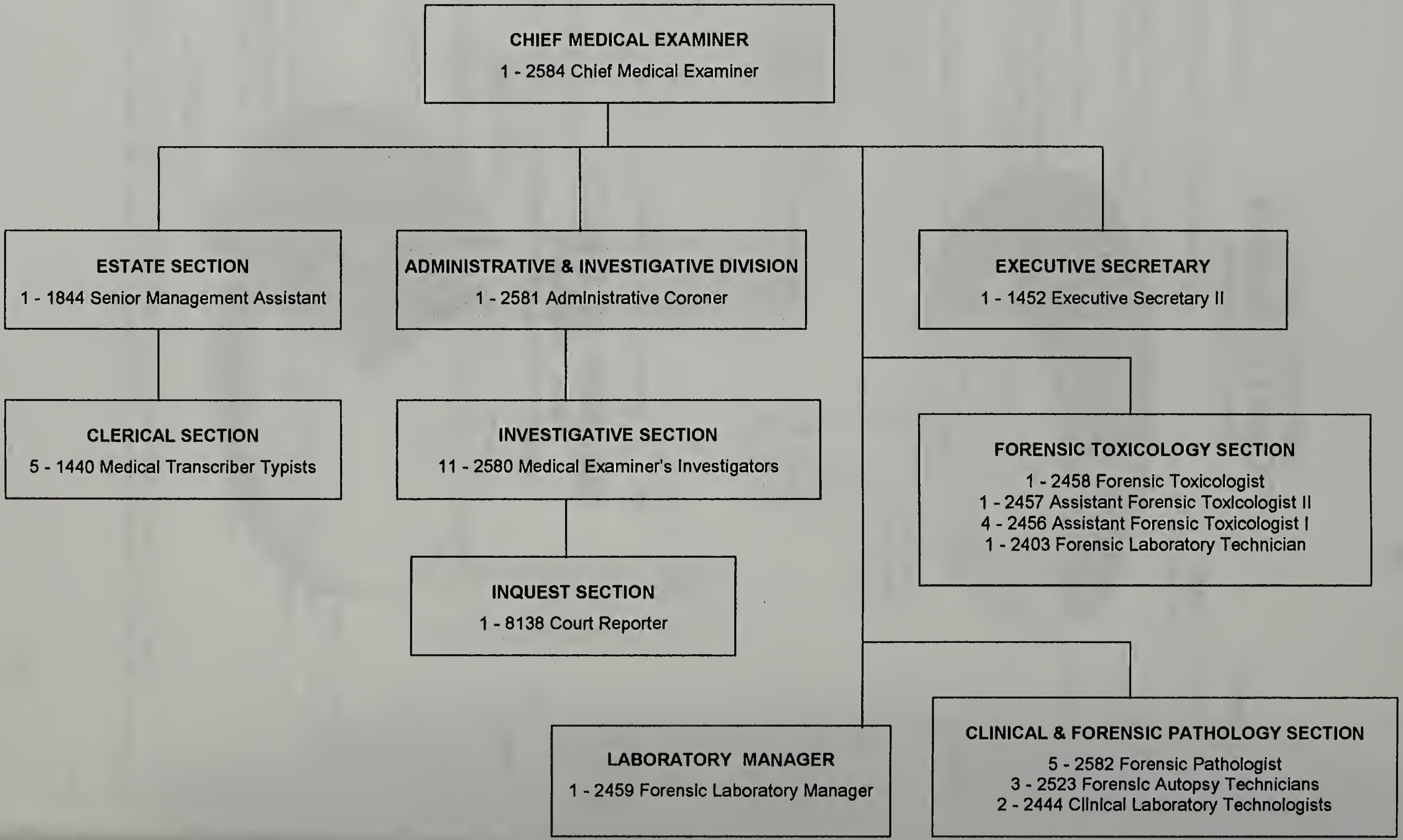
MANNER OF DEATH

FISCAL YEAR 1996-97

JURISDICTION ON 1,619 CASES

ORGANIZATIONAL CHART

Medical Examiner's Office



CHIEF MEDICAL EXAMINER
1 - 2584 Chief Medical Examiner

ESTATE SECTION
1 - 1844 Senior Management Assistant

CLERICAL SECTION
5 - 1440 Medical Transcriber Typists

ADMINISTRATIVE & INVESTIGATIVE DIVISION
1 - 2581 Administrative Coroner

INVESTIGATIVE SECTION
11 - 2580 Medical Examiner's Investigators

INQUEST SECTION
1 - 8138 Court Reporter

EXECUTIVE SECRETARY
1 - 1452 Executive Secretary II

FORENSIC TOXICOLOGY SECTION
1 - 2458 Forensic Toxicologist
1 - 2457 Assistant Forensic Toxicologist II
4 - 2456 Assistant Forensic Toxicologist I
1 - 2403 Forensic Laboratory Technician

LABORATORY MANAGER
1 - 2459 Forensic Laboratory Manager

CLINICAL & FORENSIC PATHOLOGY SECTION
5 - 2582 Forensic Pathologist
3 - 2523 Forensic Autopsy Technicians
2 - 2444 Clinical Laboratory Technologists

DEPARTMENTAL COSTS

FISCAL YEAR 1996 - 1997

Total Budget		$3,373,881.00
Transfers to Controller: Health and Retirement	$	485,698.00
Net Budget (all other costs)		$2,888,183.00
Total Cases.		4,370
Cost per case investigated	$	660.91
Revenues (sales of records, public auctions, fee-for-service work)	$	175,850.00
Total Costs Ad Valorum Taxes per case investigated	$	620.67

As indicated elsewhere, this includes all investigative, administrative, scientific and expert witness costs to the County.

DEPARTMENT STATUS AND FUTURE

The principal responsibility for the current and immediate year is to upgrade instrumentation and procedures in the Toxicology, Pathology and Autopsy Departments. We also plan to upgrade the LAN for the Department increasing its capabilities and reliability.

Significant improvements in the Toxicology Department are the replacement of several gas chromatographs and/or GC/MS (gas chromatograph/mass spectrometers), preparing and upgrading procedures and working toward an automated inventory system. This would utilize a local area network to collect and report information, simplify report preparation and maintain evidence and supply inventories.

The Pathology Department requires replacement of instrumentation and upgrading of the written protocols for all policies and procedures.

The Autopsy Department requires continued improvement to maintain compliance with the bloodborne pathogen regulation, tuberculosis prevention and other procedures and policies that are operative in this department.

As we continue to upgrade our computer capabilities, data management, inventory and evidence control and regulation, interpretable record information is becoming more accessible to this and to other departments. An improvement in the real-time availability of data means that other departments, such as the Health Department, can make decisions for community health purposes based on these data. Our expanded computer capabilities improve our monitoring of evidence (disposal and location), and help in the investigative process and work necessary for case investigation.

The refrigeration overhaul that was initiated this past year is near completion.

The Sudden Infant Death Syndrome “Back to Sleep” campaign was associated with decreased numbers of sudden infant deaths.

Our plans for this next fiscal year are to continue to improve and expand our service capabilities.

FORENSIC MEDICINE

Forensic medicine generally is considered to be a marriage of medicine and the forensic sciences oriented to medico-legal issues. The field is wide-ranging and growing, becoming even broader in scope than the traditional concept as practiced in Europe. As a Medical Examiner, we commonly examine living persons for medico-legal purposes, often interpreting the findings for court purposes.

There has been continued growth and accentuation of the role of forensic medicine in the legal and medico-legal world over the past year. This office has continued its role in forensic medicine for both living and dead, playing a vital role in the community.

We serve in a number of places in the community. Some of these include:

Examination and diagnosis of the living:

- Examination and evaluation of child abuse
- Examination and evaluation of sexual assault injuries
- Examination and evaluation of spousal abuse
- Evaluation of citizens' complaints against the Police Department
- Testimony and interpretation of hospital records and procedures
- Evaluation of force and patterned injuries
- Examination of victims and suspects for trace evidence and injuries
- Collection of blood from suspects and victims for serology, toxicology and other testing
- Court testimony on force, great body injury (GBI) and other issues
- Alcohol and drug interaction in driving under the influence cases and related issues
- Physiologic effects of drug interactions
- Toxicology, including environmental and industrial toxicities
- Teaching - hospitals, forensic, law enforcement, community
- Analysis for drugs on individuals on probation
- Analysis for drugs on management control cases for the County

Examination and evaluation of the dead:

- Scene investigation, reconstruction and analysis
- Evidence collection and testing
- Blood spatter analysis and interpretation
- Patterned evidence analysis and interpretation
- Trace evidence collection
- Time and place of death information
- Forensic autopsy - consultation and interpretation
- Analysis for chemical and limited serology testing
- Forensic toxicology
- Consultation with District Attorney and Public Defender
- Reconstruction Analysis and court presentation
- Teaching - forensic and legal

TABLE XVI. VEHICULAR FATALITIES IN 1995-1996

Drug and Alcohol Involvement

Method	Number	% With Alcohol*	Ave. Alc. Conc. (g%)	% With Drugs**	% With Drugs and Alcohol
Pedestrian	23 (41%)	36	0.14	19	0
Auto Driver	9 (16%)	0	-	38	0
Auto Passenger	11 (20%)	20	0.04	22	11
Motorcycle Driver	5 (9%)	100	0.12	0	-
Bicycle Driver	5 (9%)	0	-	20	0
Truck Driver	2 (4%)	50	0.17	50	0
Other	1 (2%)	0	-	100	0

* Refers to percentages of victims (of those tested) with positive blood ethyl alcohol levels.
** Refers to percentage of victims (of those tested) with positive blood tests for abuse drugs.

TABLE XVII. ABUSE DRUGS PRESENT IN VEHICULAR FATALITIES

	Drugs			
Situation	Cocaine	PCP	Heroin	Amphetamines
Pedestrian	2	1	0	1
Auto Driver	2	0	0	1
Auto Passenger	2	0	0	0
Motorcycle Driver	0	0	0	0
Bicycle Driver	0	0	1	0
Truck Driver	0	0	0	1
Other	0	0	0	1
TOTALS	**6**	**1**	**1**	**4**

TABLE XVIII. VEHICULAR FATALITIES BY AGE

Age Range - Years

Situation	0-5	6-12	13-16	17-19	20-29	30-39	40-49	50-59	60-69	70-79	80+
Auto Driver	0	0	1 (11%)	1 (11%)	2 (22%)	1 (11%)	3 (33%)	1 (11%)	0	0	0
Auto Passenger	1 (9%)	1 (9%)	0	2 (18%)	4 (36%)	0	2 (18%)	1 (9%)	0	0	0
Motorcycle Driver	0	0	0	1 (20%)	2 (40%)	1 (20%)	0	1 (20%)	0	0	0
Pedestrian	0	0	0	0	3 (13%)	4 (17%)	7 (30%)	1 (4%)	3 (13%)	2 (9%)	3 (13%)
Bicycle Driver	0	0	0	0	2 (40%)	1 (20%)	1 (20%)	1 (20%)	0	0	0
Truck Driver	0	0	0	0	1 (50%)	0	0	1 (50%)	0	0	0
Other	0	0	0	0	0	0	0	1 (100%)	0	0	0
TOTALS **% Of Totals**	**1** **(2%)**	**1** **(2%)**	**1** **(2%)**	**4** **(7%)**	**14** **(25%)**	**7** **(12%)**	**13** **(23%)**	**7** **(12%)**	**3** **(5%)**	**2** **(4%)**	**3** **(5%)**

NOTE: Row percents refer to percentages by age group for each situation. These can be compared to total percentages for each age group to see if a situation is more or less prevalent in any age group. For example, accidental deaths of motorcycle drivers in the 20-29 year age group occur *more* frequently (40%) than the general involvement of this age group in vehicular fatalities (25%). Also, accidental deaths of auto drivers in the 13-19 year age group occurred more frequently (22%) than the general involvement of this age group in vehicular fatalities (9%).

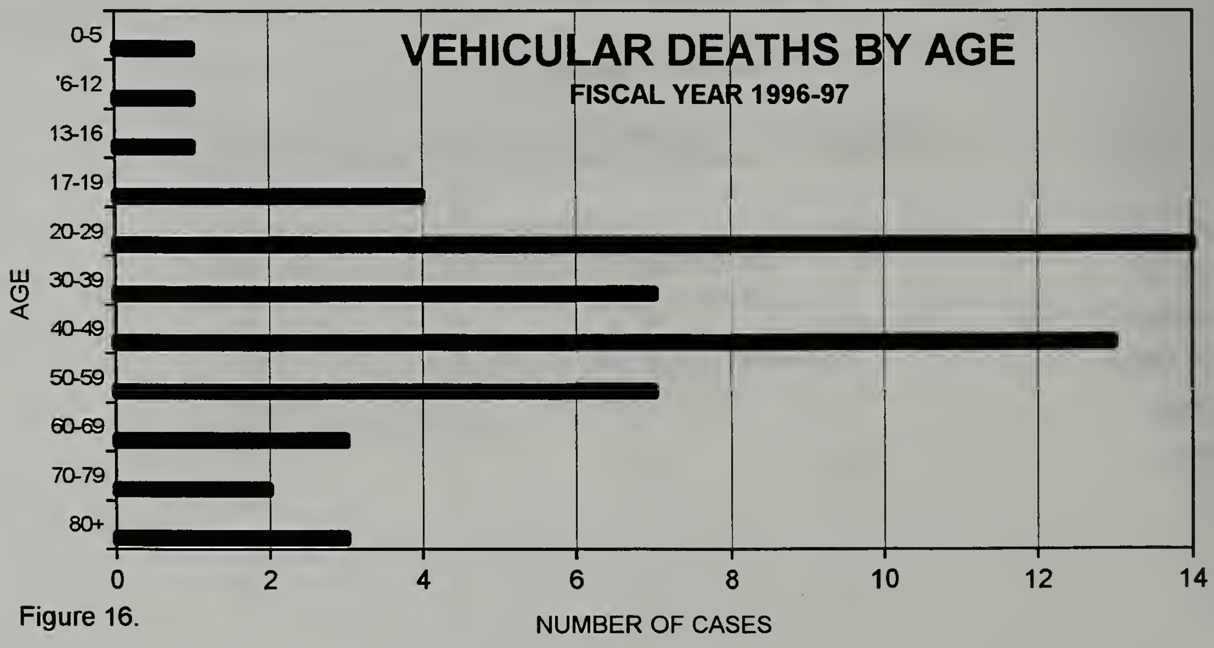


Figure 16.

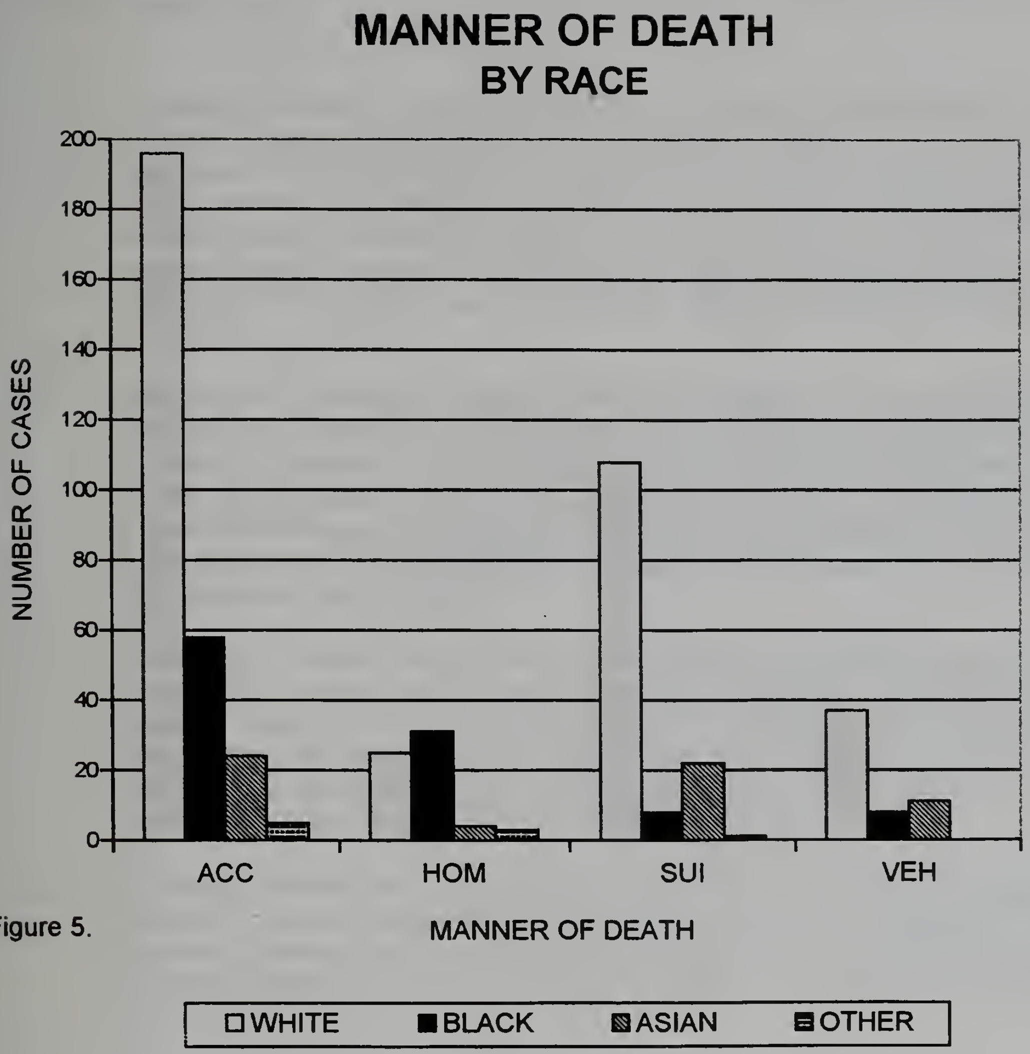

MANNER OF DEATH
BY RACE
NUMBER OF CASES
200
180
160
140
120
100
80
60
40
20
0
ACC
HOM
SUI
VEH
MANNER OF DEATH
□ WHITE
■ BLACK
▨ ASIAN
⊟ OTHER

Figure 5.

YEARLY COMPARISON OF MEDICAL EXAMINER'S CASES

Comparisons of manners of death as well as methods used over the last ten fiscal years are presented in this section. The most significant differences which have occurred over the last ten years which can be observed in these tabulations include:

1. Regarding **manners of death**, the number of homicides (63) during fiscal year 1996-97 was a decrease of 36% from the 98 homicides recorded in 1995-96. The number of accidental deaths decreased by 11% from 1995-96. The number of cases ruled to be suicide (139) also decreased 11% from fiscal year 1995-96. The number of death due to natural causes which came under the jurisdiction of this office decreased 7% from fiscal year 1995-96. The total number of vehicular deaths (56) was the second lowest number observed during the last 10 fiscal years. (See Table V and Figure 6, page 18, Figure 2, page 8, and Figure 10, page 22.)

2. With respect to **methods used in homicide deaths**, the most notable difference from the previous fiscal year is the 20% decrease in homicides due to firearms (from 59 in 1995-96 to 47 in 1996-97). The number of death from firearms in 1996-97, while being the lowest number seen by this method since 1988-89, still accounts for 75% of the homicides (See Table VI and Figure 7, page 19 and Figure 24, page 55). There were striking decreases from the previous fiscal year in the deaths due to stabbing (63% decrease, from 16 to 6) and deaths due to traumatic injuries (56% decrease, from 18 to 8).

3. There was an 11% decrease in the **number of suicides** during the fiscal year 1996-97 (139) as compared to 1995-96 (156). Although there were decreases in the deaths due to firearms (27% decrease, from 45 to 33 cases) and deaths due to drugs/poisons (37% decrease, from 49 to 31 cases), there were significant increases in deaths due to hanging (58% increase, from 19 to 30 cases) and in deaths due to jumps from buildings (120% increase, from 10 to 22 cases). (See. Table VII and Figure 8, page 20, and Figure 24, page 55).

4. Regarding **deaths ruled to be accidental**, those which were caused by drugs showed the most significant change, a decrease of 21% from 210 in fiscal year 1995-96 to 166 in 1996-97. The number of deaths from falls is still second only to deaths from drugs as a leading cause of accidental deaths (See Table VIII and Figure 9, page 21, and Figure 24, page 55).

YEARLY COMPARISONS OF MEDICAL EXAMINER'S CASES

TABLE V. YEARLY COMPARISON OF MANNER OF DEATH

	Fiscal Year									
Manner of Death	'87-'88	'88-'89	'89-'90	'90-'91	'91-'92	'92-'93	'93-'94	'94-'95	'95-'96	'96-'97
Accident	258	258	298	229	266	286	270	296	319	283
Homicide	110	91	94	88	123	127	118	94	98	63
Suicide	162	171	128	154	153	132	136	124	156	139
Natural	1,074	1,010	903	911	885	930	816	925	1,115	1,034
Vehicular*	75	71	76	83	79	79	54	80	58	56
Undetermined	82	85	76	72	53	58	42	30	40	44
TOTALS	**1,761**	**1,686**	**1,575**	**1,537**	**1,557**	**1,612**	**1,451**	**1,549**	**1,789**	**1,619**

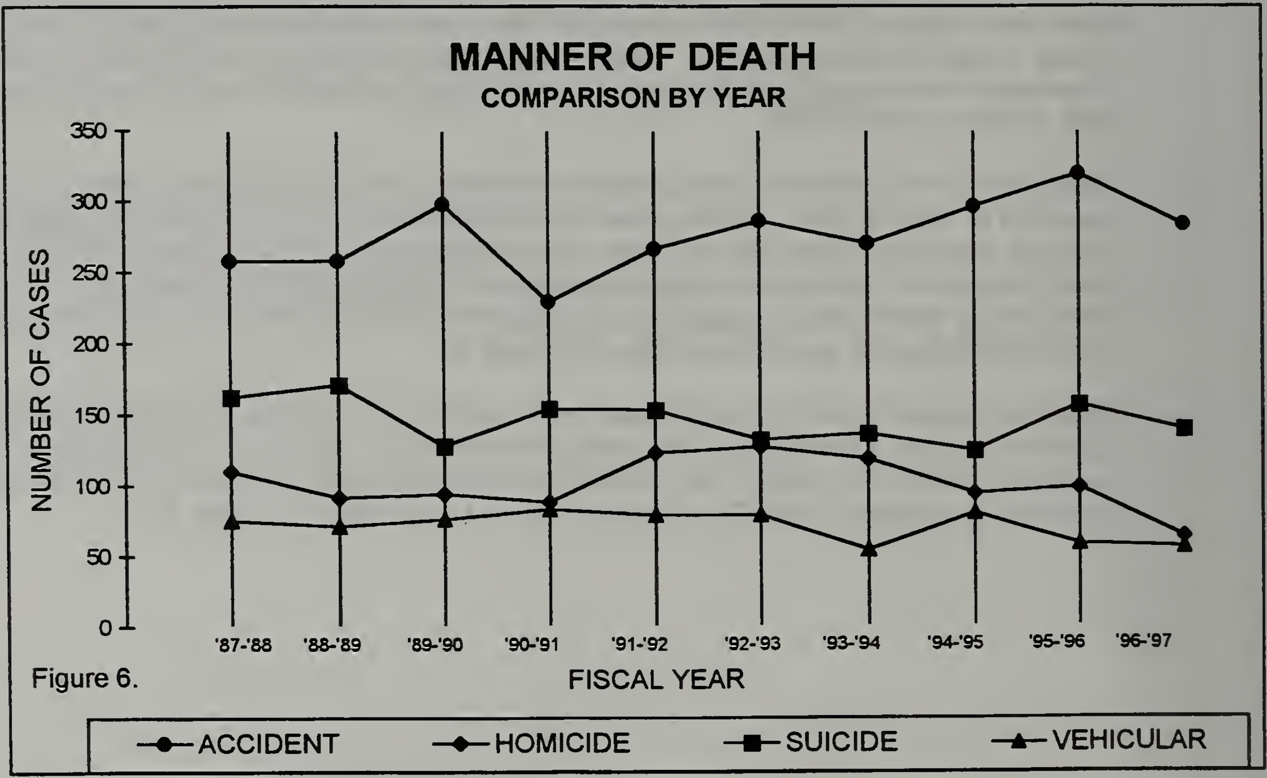


Figure 6.

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* Vehicular deaths. These include 11 cases ruled to be homicide, 43 cases ruled to be accidental, 1 ruled to be suicide and 1 with mode undetermined.

TABLE VI. YEARLY COMPARISON OF HOMICIDE* METHODS USED

	Fiscal year									
Method Used	**'87-'88**	**'88-'89**	**'89-'90**	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**
Firearms	48	41	61	50	70	75	83	68	59	47
Stabbing	35	21	17	17	20	24	18	14	16	6
Traumatic Injury	23	22	10	14	22	16	12	9	18	8
Vehicular	13	16	10	16	15	14	11	6	2	11
Asphyxia / Strang.	3	5	3	5	7	4	1	3	3	1
Other	1	2	3	2	4	8	4	0	2	1
TOTALS	**123**	**107**	**104**	**104**	**138**	**141**	**129**	**100**	**100**	**74**

* Total includes 11 vehicular homicide deaths.

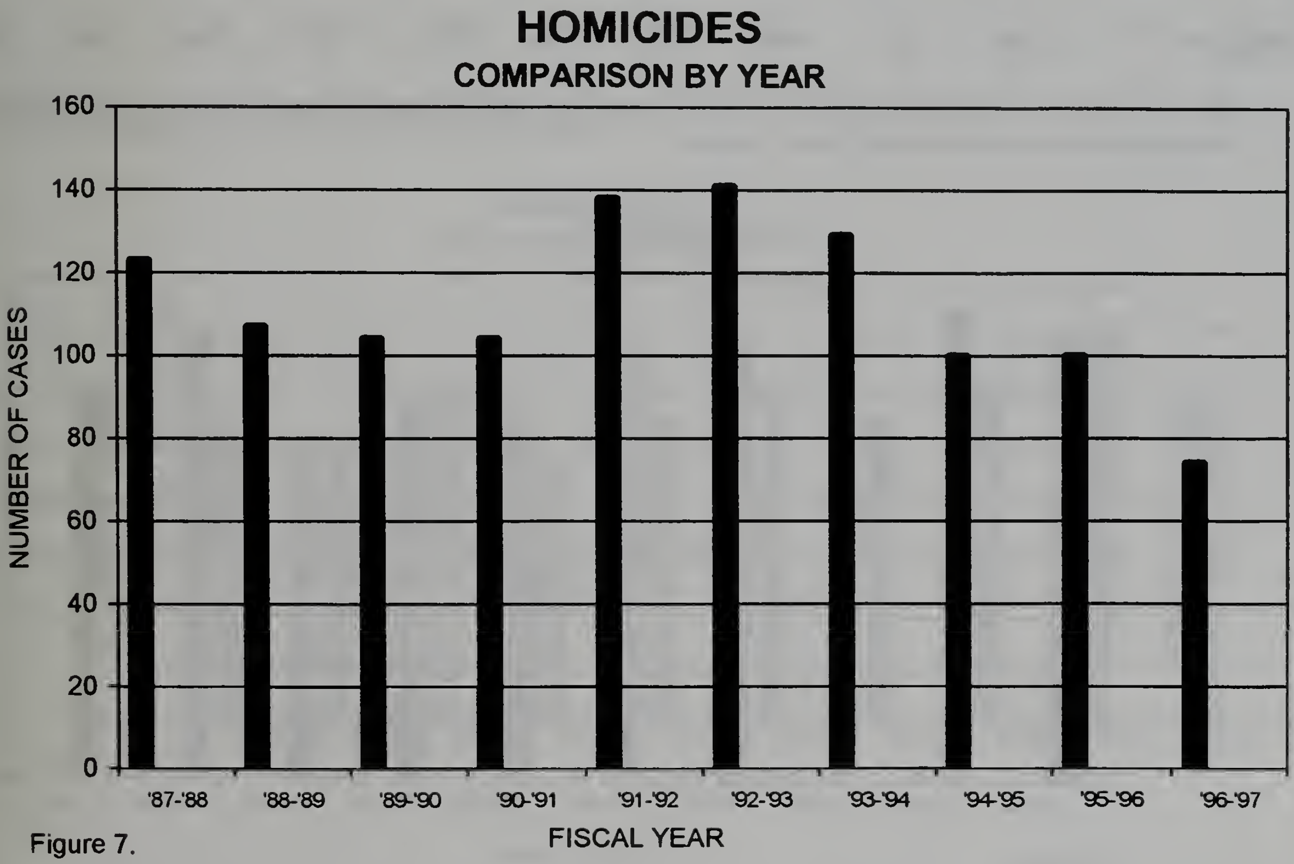


Figure 7.

TABLE VII. YEARLY COMPARISON OF SUICIDE METHODS USED

	Fiscal year									
Method Used	'87-'88	'88-'89	'89-'90	'90-'91	'91-'92	'92-'93	'93-'94	'94-'95	'95-'96	'96-'97
Burning	0	2	0	2	0	0	1	4	0	1
CO Poisoning	2	2	9	5	6	5	3	1	3	1
Cutting / Stabbing	8	5	3	7	2	9	8	5	2	4
Drowning	3	2	0	1	2	3	1	3	9	5
Drugs / Poisons	32	44	31	37	44	31	25	37	49	31
Firearms	42	44	35	40	37	32	44	24	45	33
Hanging	28	17	23	25	23	22	22	19	19	30
Jump - Bay Bridge	1	2	2	0	2	1	5	2	1	2
Jump - Building	19	30	7	13	20	8	12	19	10	22
Jump - G.G. Bridge	18	15	10	13	4*	1	3	1	4	1
Jump - Other	-	-	-	-	2	3	3	0	1	0
Suffoc. / Strang.	7	7	6	6	9	14	9	7	13	7
Vehicular / BART	-	-	-	-	2	2	0	0	2	1
Other	2	1	2	7	0	2	0	2	0	2
TOTALS**	**162**	**171**	**128**	**156**	**153**	**133**	**136**	**124**	**158**	**140**

* Starting midway in fiscal year 1991-92, most Golden Gate Bridge suicides were handled by Marin County.

** Includes vehicular deaths ruled to be suicides.

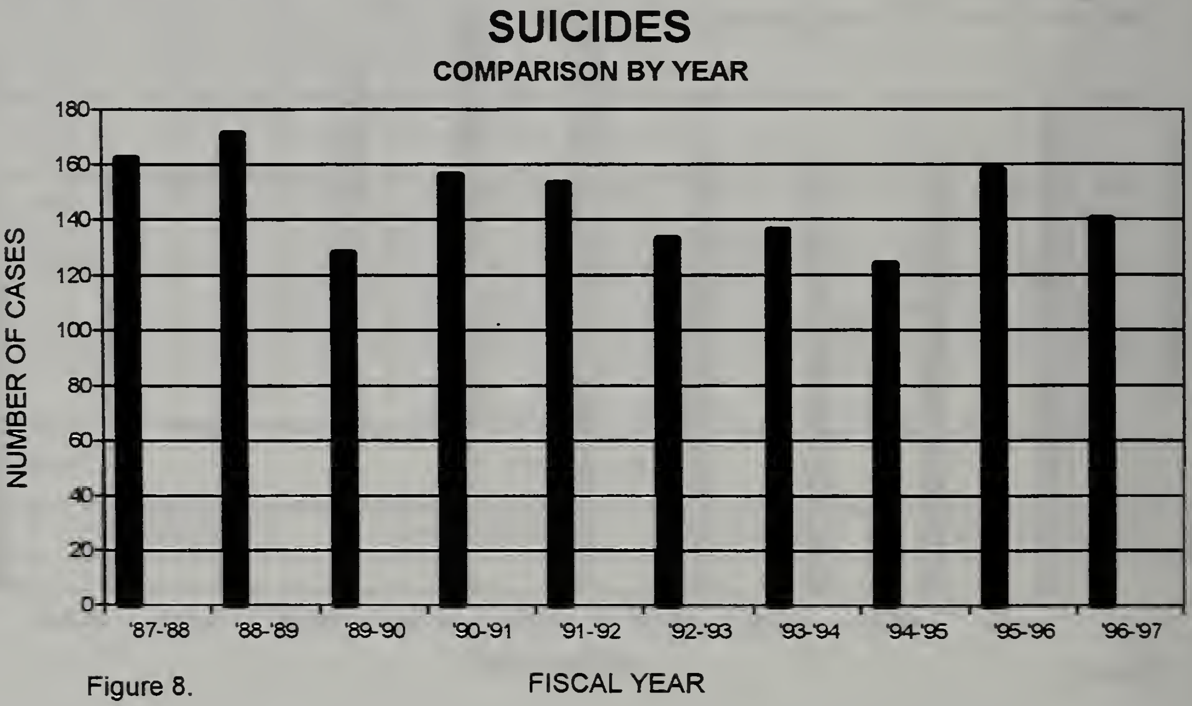


Figure 8.

TABLE VIII. YEARLY COMPARISON OF ACCIDENTAL* DEATH SITUATIONS

	Fiscal year									
ation	'87-'88	'88-'89	'89-'90	'90-'91	'91-'92	'92-'93	'93-'94	'94-'95	'95-'96	'96-'97
hyxia	2	8	8	3	3	5	5	2	11	15
iration	10	5	13	10	12	6	12	17	2	2
ns	12	3	15	10	4	4	8	7	5	9
wning	14	11	10	12	4	5	11	6	5	10
g Reactions	-	-	-	4	2	0	1	3	0	2
g/Alc. Abuse Relat.	13	9	3	6	13	18	9	5	5	2
gs / Poisons	100	144	157	97	123	156	158	169	210	166
s	76	54	53	55	61	58	48	59	48	54
arms	1	3	0	2	2	1	2	2	1	0
ging	2	2	0	2	0	1	1	1	2	0
d Trauma	-	-	11	3	1	6	1	4	3	0
lical Misadventure	13	6	7	12	18	8	5	6	13	13
oke / CO Inhal.	8	11	4	8	14	6	2	7	8	10
er	7	2	5	5	9	9	7	8	6	0
TALS	**258**	**258**	**298**	**229**	**266**	**286**	**270**	**296**	**319**	**283**

* Vehicular deaths are not included in this tabulation.

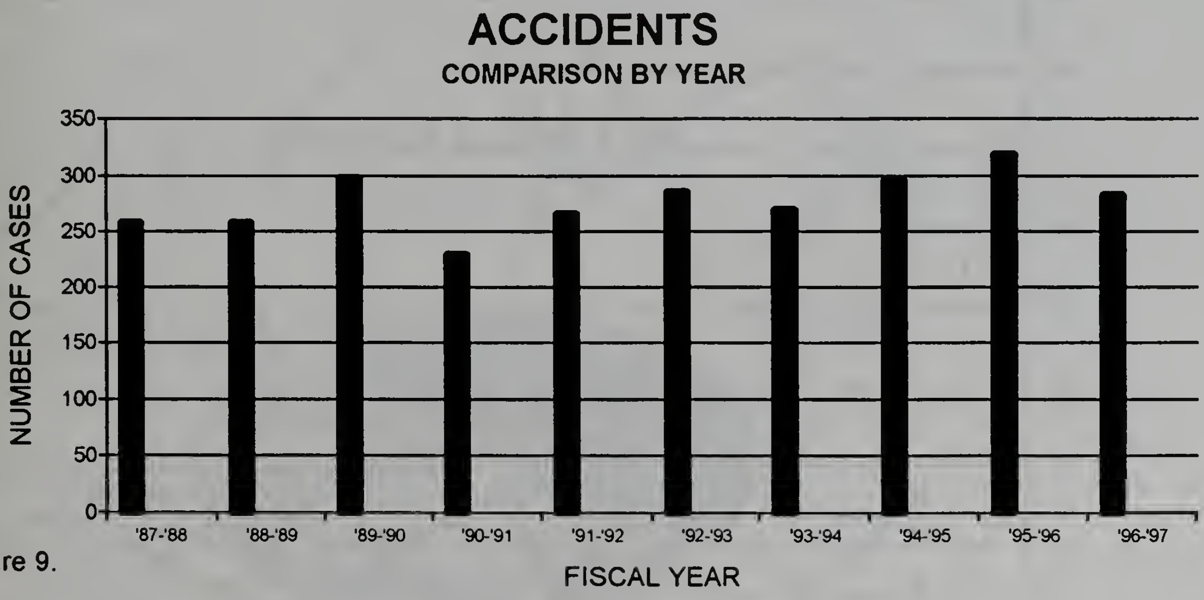


Figure 9.

Table IX. NUMBER OF VEHICULAR FATALITIES BY TYPE

	Fiscal Year									
Situation	**‘87-’88**	**‘88-’89**	**‘89-’90**	**‘90-’91**	**‘91-’92**	**‘92-’93**	**‘93-’94**	**‘94-’95**	**‘95-’96**	**‘96-’**
Pedestrian	24	36	33	27	37	39	29	36	27	23
Bicycle Driver	2	1	2	4	1	2	1	4	3	5
Auto Driver	28	14	14	21	10	11	9	19	13	9
Auto Passenger	7	11	9	16	8	6	8	10	6	11
Motorcycle Driver	4	7	10	10	11	13	6	6	7	5
Motorcycle Pass.	2	0	1	0	4	0	0	0	0	0
Truck Driver	0	0	0	0	0	4	1	1	1	2
Other / Unknown	8	2	7	5	8	4	0	4	0	1

Figure 10.

VEHICULAR FATALITIES BY TYPE

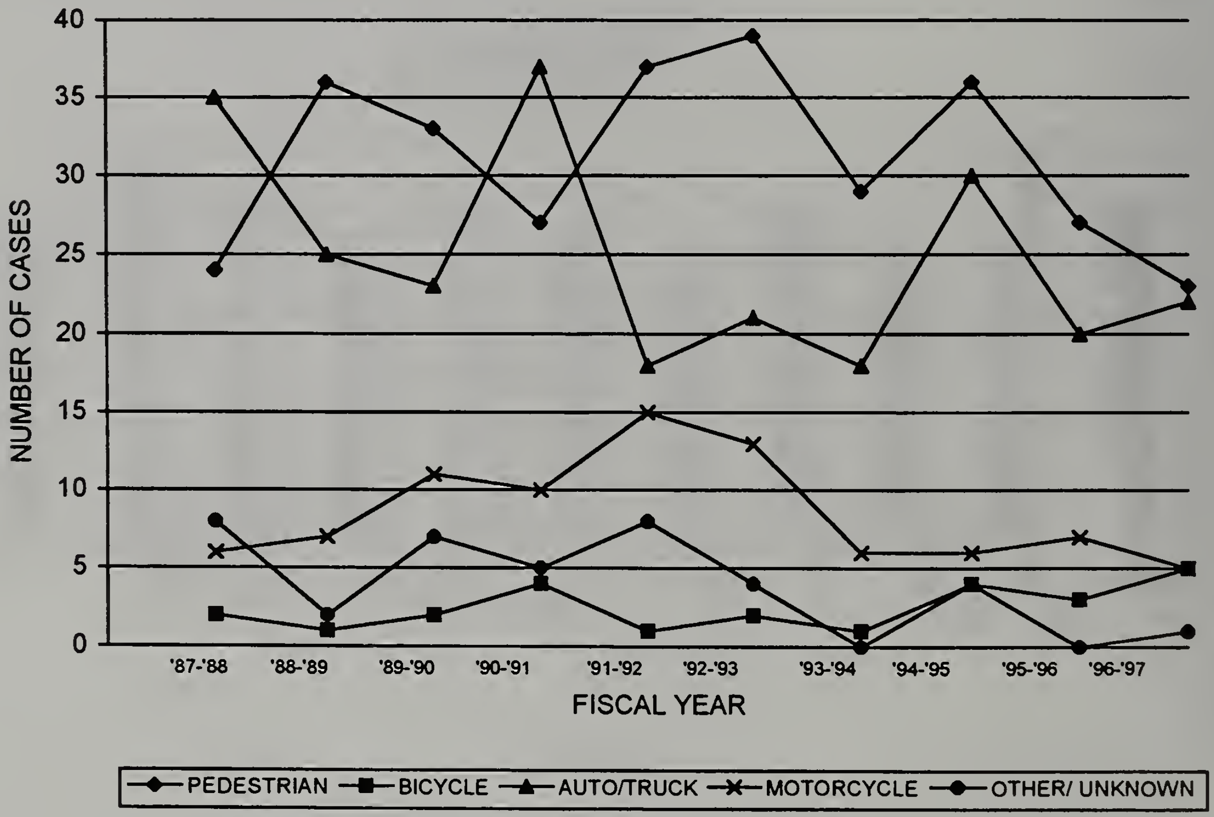


TABLE X. VIOLENT DEATHS

Of the 1,619 deaths investigated by the Medical Examiner's Office during 1996-97, 585 were determined to be the result of violence.

Mode	Total Number	% of Medical Examiner Cases	% of County Deaths
ACCIDENT	**326**	**20.1**	**4.5**
Vehicular	43	2.6	
Non-Vehicular	283	17.5	
SUICIDES	**140**	**8.7**	**1.9**
Vehicular	1	0.06	
Non-Vehicular	139	8.6	
HOMICIDE	**74**	**4.6**	**1.0**
Vehicular	11	0.7	
Non-Vehicular	63	3.9	
MODE UNDETERMINED	**45**	**2.8**	**0.6**
Vehicular	1	0.06	
Non-Vehicular	44	2.7	

VIOLENT DEATHS

FISCAL YEAR 1996-97

TOTAL = 585

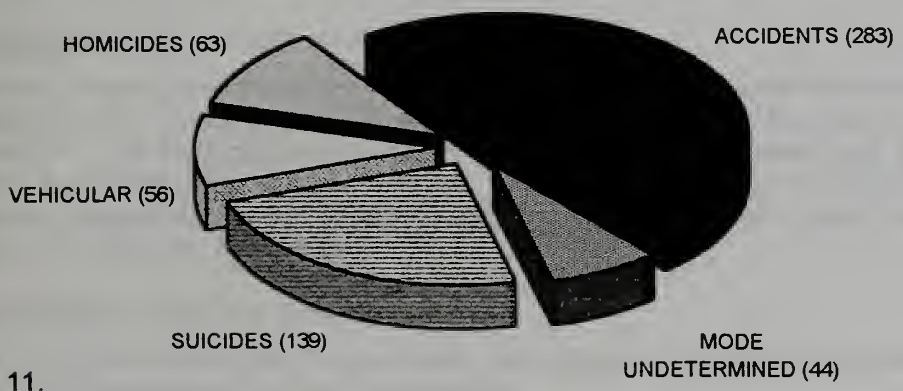


Figure 11.

ACCIDENTAL DEATHS

Three hundred and twenty-six deaths were ruled to have been due to accidental means during the 1996-97 fiscal year. Of these, 283 were non-vehicular accidental deaths. The number of individuals dying by each manner of accidental death are indicated in Figure 12, page 26 and Table XI, page 27, and the percentages of all accidental deaths represented by each manner are indicated on Table XI, page 27.

Of the accidental death victims tested for alcohol and drugs (i.e. those in the hospital for less than 24 hours), many had *significant* levels of alcohol in their blood; some had abuse drugs present (See Table XI, page 27).

Abuse Drug Involvement (Table XII, page 28)

Overall, the number of times the 4 most common abuse drugs were found to be present in accidental death cases was 226, a 21% decrease from fiscal year 1995-96 (285). (Note that more than 1 abuse drug may have been present in a single case.) This is in contrast to the dramatic increases seen previously - from 110 cases in fiscal year 1990-91 to 163 cases in fiscal year 1991-92 (a 48% increase!) to 222 cases in fiscal year 1992-93 (a further 36% increase from the preceding fiscal year). Of the deaths caused by drugs, heroin (measured as morphine) was seen most frequently (108 cases), a decrease of 23% from last fiscal year's 141 cases. The second most frequently seen abuse drug in deaths due to drugs was cocaine (80 cases), a decrease of 22% from last fiscal year. Amphetamines were present in deaths due to drugs in 21 cases, a decrease of 22% from last year's count of 27 such deaths. The number of cases with cocaine present decreased 20% from the previous fiscal year (109 to 87). The number of cases with heroin present decreased by 24% (from 147 to 111 cases). Deaths with amphetamines present decreased by 3% during this same time period (from 29 to 28 cases). This follows a 33% decrease in cases with amphetamines present between 1994-95 (43 cases) and 1995-96 (29 cases). Abuse drugs may have played a role in accidental deaths due to falls (8 cases) and drowning (5 cases).

Racial Distribution (Figure 13, page 29 and Table XIII, page 29)

Overall, accidental deaths occurred most frequently in whites. Deaths from burns occurred less frequently in whites (56%) than would be anticipated by the overall involvement of whites in accidental deaths (69%). Asians are much less involved in deaths due to drug/poisons (0.6%) than would be expected by the involvement of Asians in accidental deaths (8%). Blacks are less heavily represented in deaths by asphyxia (0%) than would be expected based on the general involvement of blacks in all types of accidental deaths (20%).

Age Distribution (Figure 14, page 30 and Table XIV, page 31)

Deaths due to drowning and burns are the most common causes of accidental deaths in the youngest age group (0-5 years). There were 2 non-vehicular accidental deaths in the age group from 6-16 years during 1996-97. The most common causes of accidental deaths in people over 60 years of age are burns (55% of all deaths due to burns) and falls (56% of all deaths due to falls). Deaths due to drug overdoses are concentrated in the 30-49 year age group with 41% of all deaths due to drug overdoses occurring in the 40-49 year age group.

Distribution by Sex (Table XV, page 32)

Males are 2.5 times as likely as females to be the victims of non-vehicular accidental deaths. This difference is less pronounced in deaths due to burns.

NON-VEHICULAR ACCIDENTS

This category includes all unintentional fatalities. There were 283 accidental deaths (non-vehicular) which accounted for 17.5% of the Medical Examiner death investigations for the fiscal year of 1996-97.

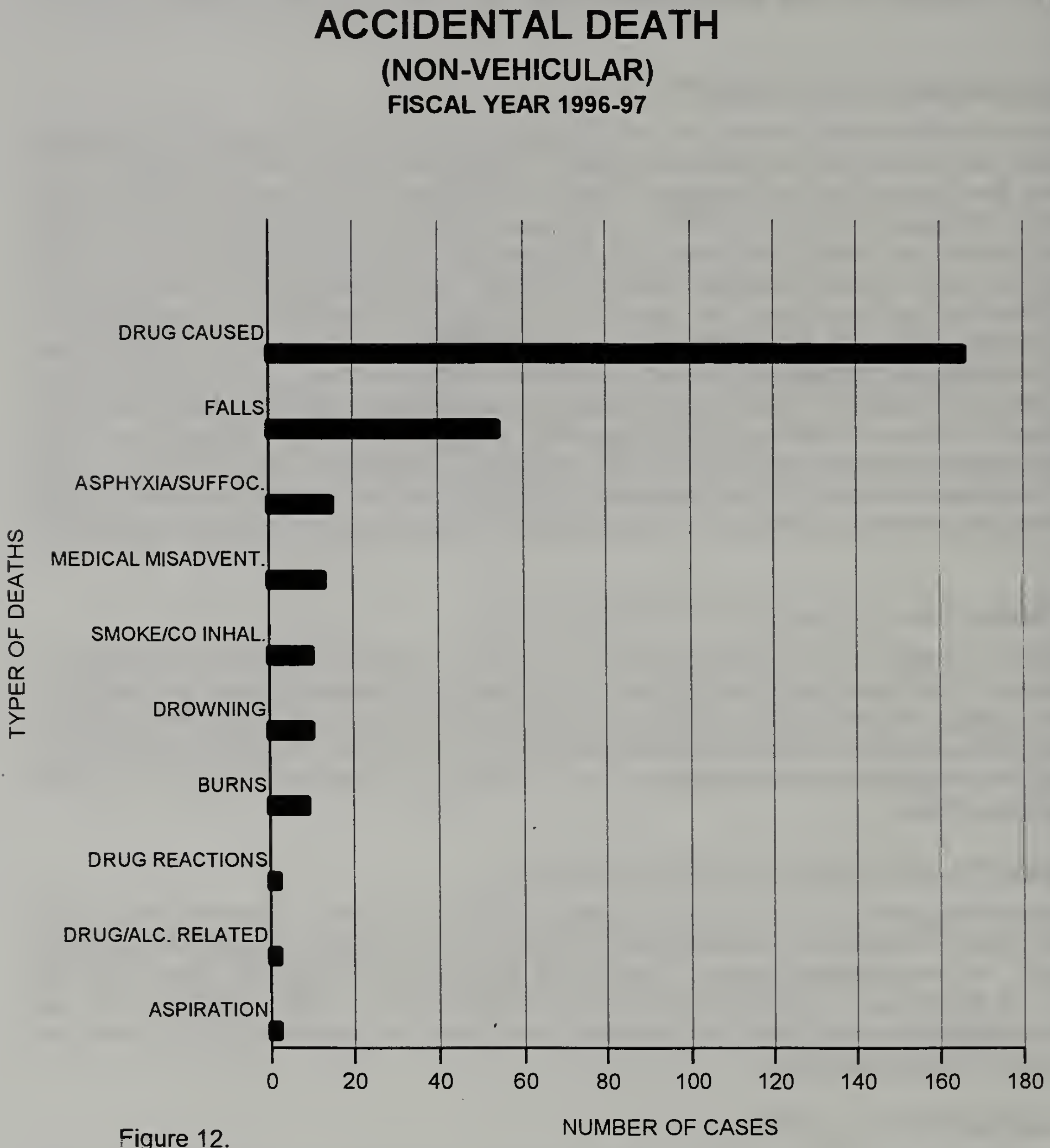


Figure 12.

TABLE XI. ACCIDENTAL DEATHS BY MODE

Drug and Alcohol Involvement

Method	Number	% Of Total Accidents	% Alcohol *	Ave. Alcohol Conc. (g%)	% Drugs **
Asphyxia / Suffocation	15	5.3	30	0.23	14
Aspiration	2	0.7	0	-	0
Burns	9	3.2	50	0.18	-
Drowning	10	3.5	33	0.14	44
Drug Caused	166	58.7	51	0.16	99
Drug Reaction	2	0.7	-	-	-
Drug / Alcohol Abuse Related	2	0.7	-	-	100
Falls	54	19.1	29	0.18	44
Medical Misadventure	13	4.6	0	-	0
Smoke / CO Inhalation	10	3.5	0	-	14

* Refers to percentage of victims (of those tested) with positive blood ethyl alcohol levels.
** Refers to percentage of victims (of those tested) with positive tests for abuse drugs.

It should be noted that a blood ethyl alcohol concentration of 0.08% is considered to be intoxicated when driving.

TABLE XII. ABUSE DRUGS PRESENT IN NON-VEHICULAR ACCIDENTS

	Drugs			
Situation	**Cocaine**	**PCP**	**Heroin**	**Amphetamines**
Asphyxia / Suffocation	1	0	0	0
Aspiration	0	0	0	0
Burns	0	0	0	0
Drowning	1	0	1	3
Drug / Alcohol Abuse Related	1	0	1	0
Drug Caused	80	0	108	21
Drug Reactions	0	0	0	0
Falls	4	0	1	3
Medical Misadventure	0	0	0	0
Smoke / CO Inhalation	0	0	0	1
TOTALS	**87**	**0**	**111**	**28**

NOTE: Drugs may have been present singly or in combination.
Drugs used therapeutically are not included in this tabulation
There may be more than one drug present in a case.

Overall, the number of times the 4 most common abuse drugs were present in accidental deaths (226) decreased 21% from 1995-96 (285). The number of deaths with cocaine present (alone or in combination with other drugs) was 87, 20% lower than in 1995-96 (109). The number of deaths with heroin present (111), measured as morphine, decreased 24% from 147 in 1995-96. PCP was not present in any accidental deaths. Accidental deaths in which amphetamines were present have decreased 35% from 43 in 1994-95 to 28 in 1996-97.

TABLE XIII. ACCIDENTAL DEATH SITUATIONS BY RACE

	Race								
Method	**White**		**Black**		**Asian**		**Other**		**Total**
Asphyxia / Suffocation	12	(80%)	0	(0%)	3	(20%)	0	(0%)	15
Aspiration	0	(0%)	0	(0%)	2	(100%)	0	(0%)	2
Burns	5	(56%)	0	(0%)	3	(33%)	1	(11%)	9
Drowning	7	(70%)	1	(10%)	1	(10%)	1	(10%)	10
Drug / Alc. Abuse Related	1	(50%)	1	(50%)	0	(0%)	0	(0%)	2
Drug / Poison Caused	117	(70%)	45	(27%)	1	(0.6%)	3	(2%)	166
Drug Reaction	1	(50%)	0	(0%)	1	(50%)	0	(0%)	2
Falls	38	(70%)	7	(13%)	9	(17%)	0	(0%)	54
Medical Misadventure	9	(69%)	1	(8%)	3	(23%)	0	(0%)	13
Smoke / CO Inhalation	6	(60%)	3	(30%)	1	(10%)	0	(0%)	10
TOTALS	**196**	**(69%)**	**58**	**(20%)**	**24**	**(8%)**	**5**	**(2%)**	**283**

NOTE: Row percentages refer to percentages by race for each mode. These can be compared to total percentages for each race to see whether a mode is more or less prevalent in a racial group. For instance, deaths from falls appear to occur *more* frequently in Asians (17%) than the general involvement of Asians in accidents (8%). Deaths from falls occur *less* frequently in Blacks (13%) than would be anticipated, based on the overall involvement of Blacks in accidental deaths (20%).

RACE OF NON-VEHICULAR ACCIDENT VICTIMS

FISCAL YEAR 1996-97

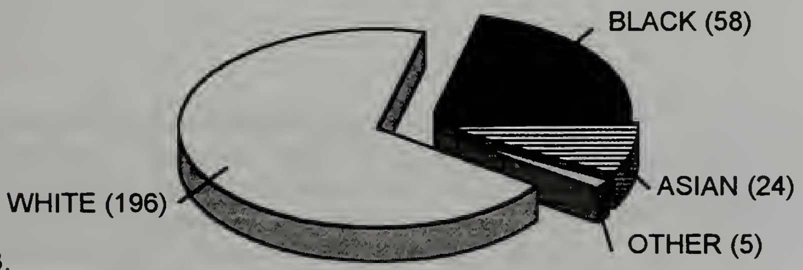


Figure 13.

AGE OF ACCIDENTAL DEATH VICTIMS

FISCAL YEAR 1996-97

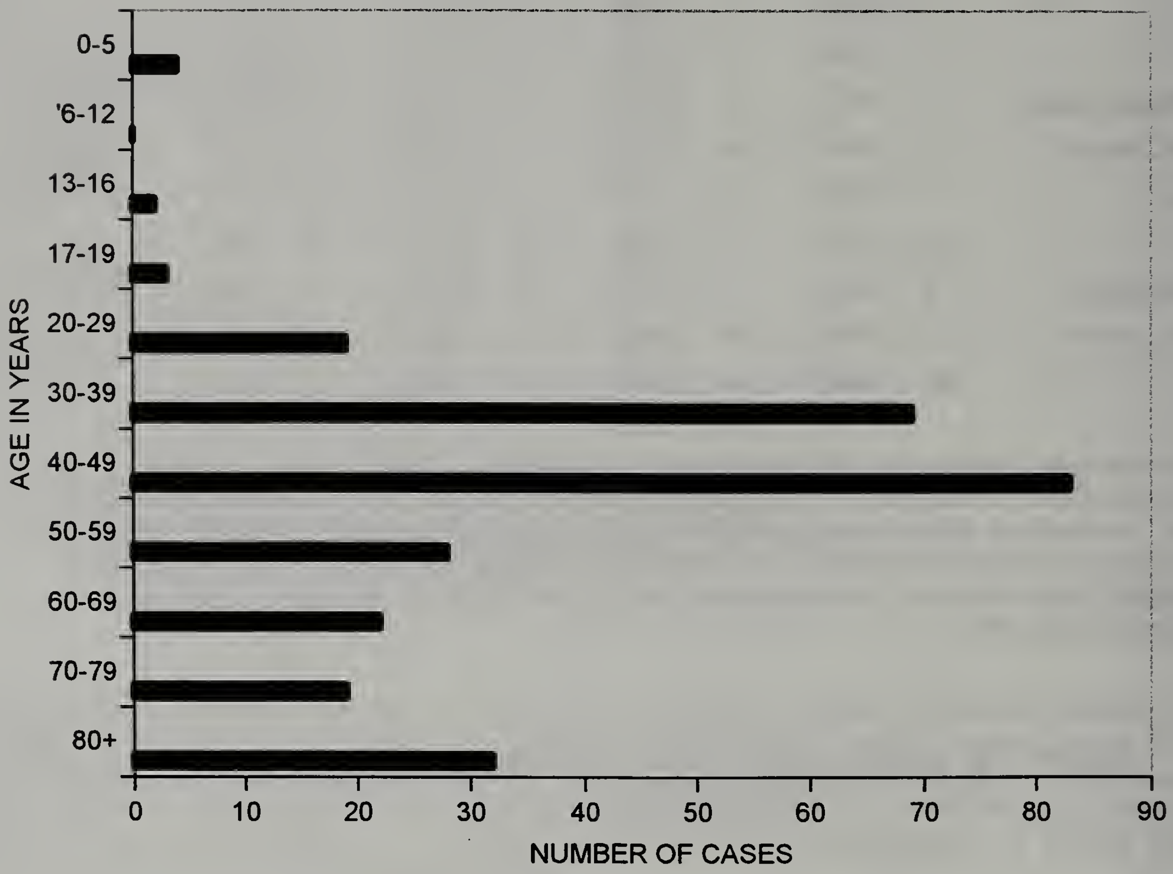


Figure 14.

TABLE XIV. ACCIDENTAL DEATH SITUATIONS BY AGE

	Age Range - Years											
Method	**0-5**	**6-12**	**13-16**	**17-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80+**	**Ave. Age**
Asphyxia	1 (7%)	0	0	0	1 (7%)	3 (20%)	0	2 (13%)	1 (7%)	1 (7%)	6 (40%)	59.6
Aspiration	0	0	0	0	0	0	0	0	0	1 (50%)	1 (50%)	83.0
Burns	1 (11%)	0	0	0	1 (11%)	0	1 (11%)	1 (11%)	0	2 (22%)	3 (33%)	51.4
Drowning	1 (10%)	0	0	0	2 (20%)	2 (20%)	2 (20%)	1 (10%)	0	1 (10%)	1 (10%)	43.1
Drug / Alc. Abuse Rel.	0	0	0	0	0	0	0	0	2 (100%)	0	0	62.5
Drug/Poison Caused	0	0	1 (0.6%)	2 (1%)	11 (7%)	57 (34%)	68 (41%)	16 (10%)	7 (4%)	4 (2%)	0	41.3
Falls	0	0	0	1 (2%)	3 (6%)	7 (13%)	8 (15%)	3 (6%)	8 (15%)	7 (13%)	15 (28%)	62.4
Medical Misadven.	0	0	0	0	1 (8%)	0	1 (8%)	4 (31%)	2 (15%)	1 (8%)	4 (31%)	62.7
Smoke/CO Inhalation	1 (10%)	0	0	0	0	0	2 (20%)	1 (10%)	2 (20%)	2 (20%)	2 (20%)	58.7
Drug React.	0	0	1 (50%)	0	0	0	1 (50%)	0	0	0	0	30.5
TOTALS **% Of Total**	**4** **(1%)**	**0** **(0%)**	**2** **(0.7%)**	**3** **(1%)**	**19** **(7%)**	**69** **(24%)**	**83** **(29%)**	**28** **(10%)**	**22** **(8%)**	**19** **(7%)**	**32** **(11%)**	

NOTE: Row percents refer to percentage by age range for each mode. These can be compared to total percentages for each age range to see if a mode is more or less prevalent in an age group. For example, burns occurred *more* frequently in the 0-5 years of age group (11%) than the general involvement of this age group in accidents (1%) while falls in the 30-39 year age group occurred *less* frequently (13%) than all accidents in this age group (24%). Falls in the age group 60-80+ occurred *more* frequently (56%) than all accidents in this age group (26%).

TABLE XV. ACCIDENTAL DEATH SITUATIONS BY SEX

	Sex			
Method	Male		Female	
Asphyxia	9	(60%)	6	(40%)
Aspiration	0	(0%)	2	(100%)
Burns	5	(55%)	4	(45%)
Drowning	9	(90%)	1	(10%)
Drug / Alcohol Abuse Related	2	(100%)	0	(0%)
Drug / Poison Caused	127	(77%)	39	(23%)
Drug Reaction	0	(0%)	2	(100%)
Falls	39	(72%)	15	(28%)
Medical Misadventure	4	(31%)	9	(69%)
Smoke / CO Inhalation	7	(70%)	3	(30%)
TOTALS (% Of Total)	**202**	**(71%)**	**81**	**(29%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths from burns appear to occur *less* frequently in males (55%) than the general involvement of males in accidents (71%), while deaths from drowning occur *less* frequently in females (10%) than all accidents in females (29%).

VEHICULAR DEATHS

In 1996-97, there were 56 vehicular fatalities in San Francisco, a decrease of 2 (3%) from 1995-1996. The number of such fatalities by type are indicated in Figure 15, page 34 and Table XV, page 35. Percentages of all vehicular fatalities by type are shown in Table XV, page 35. The largest number of vehicular fatalities involved pedestrians; the second largest number involved automobile passengers. Automobile driver fatalities decreased 32% from 19 in 1994-95 to 13 in 1995-96 and 31% more to 9 in 1996-97. Motorcycle driver fatalities decreased by two from 7 from 1995-96 to 5 in 1996-97. Pedestrian fatalities have decreased from 36 in 1994-95 to 27 in 1995-96 to 23 in 1996-97.

Of the vehicular fatalities tested for alcohol (i.e. those in the hospital for less than 24 hours), truck drivers had the highest average blood ethyl alcohol concentration (0.17%). It should be noted that no automobile driver fatality had any alcohol in their blood. However, 2 were positive for cocaine and 1 for amphetamines.

Abuse Drug Involvement (Table XVII, page 35)

Cocaine and Amphetamines were the abuse drugs seen most frequently in vehicular fatalities (6 times and 4 times respectively). The number of times abuse drugs were found in vehicular fatalities was 12 in 1996-97, 3 in 1995-96, 4 in 1994-95, 5 in 1993-94, and 10 in 1991-92.

Age Distribution (Table XVIII, page 36, Table XIX, page 37, and Figure 16, p. 36)

The mean age of pedestrians (51) was the highest seen for any type of traffic fatality with the 60+ year age group being overrepresented in the pedestrian fatalities (35%) as compared to the overall involvement of this age group in all types of traffic fatalities (14%). It should be noted, however, that the number of pedestrian fatalities in those 50 years and over decreased 44%, from 16 in 1995-96 to only 9 in 1996-97!

Distribution by Sex (Table XIX, page 37)

Overall, Males were the predominant victims of vehicular fatalities (68%)

Racial Distribution (Table XIX and Figure 17, page 37)

Overall, vehicular fatalities occur most frequently in white non-Hispanics (50%). Asians were represented more heavily among deaths of auto drivers (33%) and pedestrians (30%) than would be expected by their involvement in all vehicular fatalities (20%). Blacks were most heavily represented among auto driver fatalities (22%) during 1996-97.

VEHICULAR DEATHS

In San Francisco, there were 56 vehicle-related fatalities (43 accidents, 11 homicides, 1 suicide, and 1 ruled to be mode undetermined) accounting for 3% of the Medical Examiner death investigations for the fiscal year 1996-97.

TYPES OF VEHICULAR DEATHS

FISCAL YEAR 1996-97

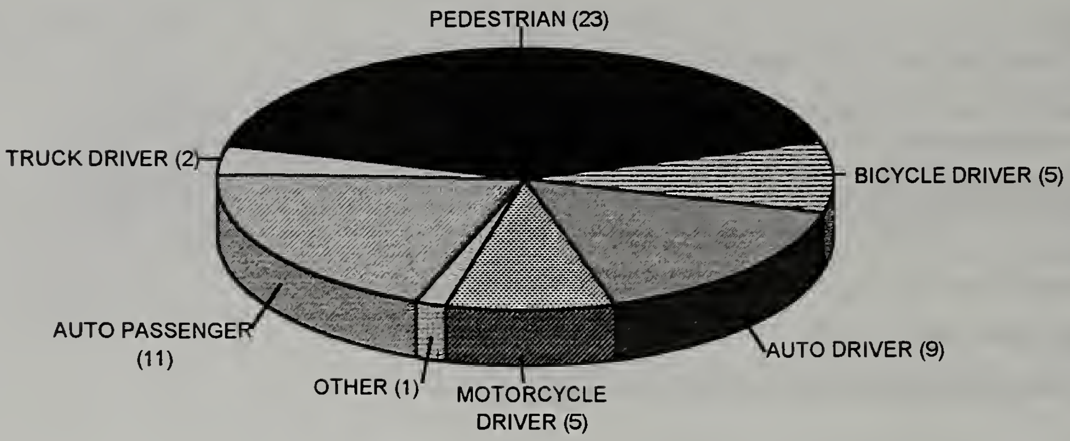


TABLE XIX. DEMOGRAPHICS OF VEHICULAR FATALITIES

	Sex		Race					Age
Situation	% M	% F	% W-NH	%W-H	%B-NH	%A	%O	Average
Auto Driver	67	33	33	11	22	33	0	35
Auto Passenger	45	55	45	27	18	9	0	25
Motorcycle Driver	80	20	80	0	20	0	0	34
Pedestrian	70	30	43	13	13	30	0	51
Bicycle Driver	80	20	60	40	0	0	0	34
Truck Driver	100	0	100	0	0	0	0	40
Other								51
Average	**68**	**32**	**50**	**16**	**14**	**20**	**0**	**40**

NOTE: Row percentages refer to percentage by demographic characteristics for each situation. These can be compared to total percentage for each characteristic to see whether a situation is more or less prevalent in any one characteristic. For example, accidental deaths of both motorcycle and bicycle drivers occur *more* frequently in males (80%) than the general involvement of males in vehicular fatalities (68%). Also, deaths of automobile drivers and pedestrians occur *more* frequently in Asians, 33% and 30% respectively, than the general involvement of Asians in vehicular fatalities (20%).

RACE OF VEHICULAR DEATH VICTIMS
FISCAL YEAR 1996-97

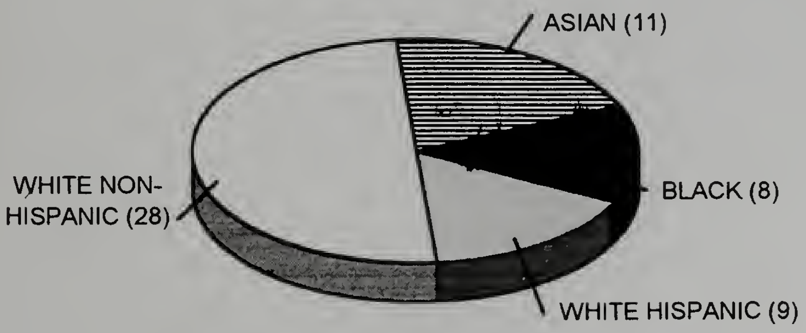


Figure 17.

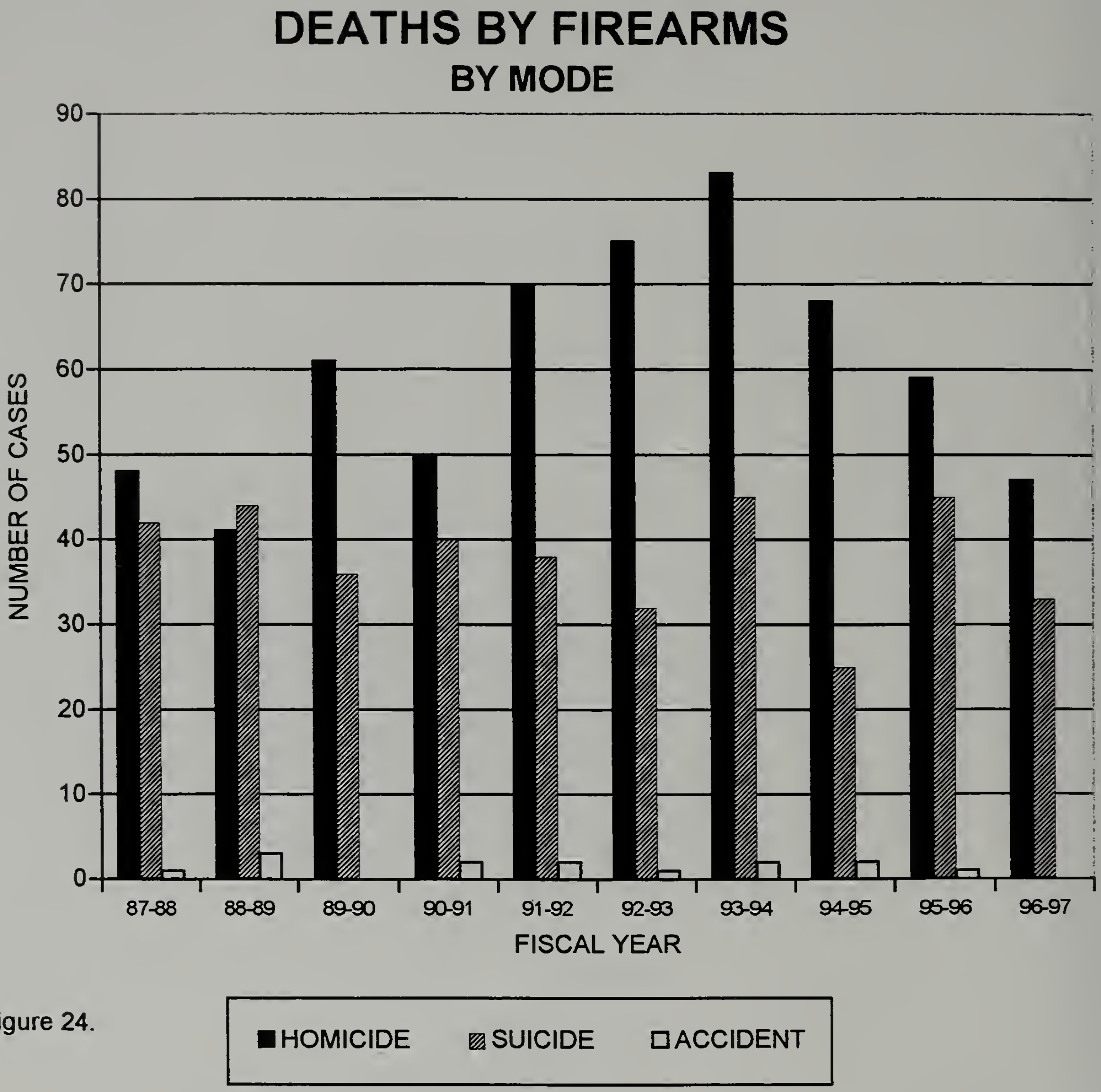

DEATHS BY FIREARMS
BY MODE
NUMBER OF CASES
0
10
20
30
40
50
60
70
80
90
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
FISCAL YEAR
■ HOMICIDE
▨ SUICIDE
☐ ACCIDENT

Figure 24.

SUICIDES

The determination of suicide as a manner of death represents the summation of scene investigation, including a review of psychological state, autopsy, pathology, toxicology and, frequently, other investigation. To the best of our knowledge, ours is the only Medical Examiner's Office routinely performing toxicology testing on multiple organs and/or body fluids in order to evaluate the metabolic status of a drug or drugs.

Realizing the immense emotional impact on family, the diagnosis of suicide is never made lightly, and always represents a decision made on the basis of data sufficient to defend that decision in a court of law, if necessary. Should these data be inconclusive, the victim automatically gets the benefit of the doubt.

Suicide takes a tremendous toll of our young people. The relative number jumping from the Golden Gate Bridge would not seem to warrant the publicity assigned them as compared to the evident need for help for individuals using other methods.

To help understand the problem, and hopefully, to aid in reduction of suicides, this office has supported suicide prevention and research programs for many years. It is hoped that this work will help to reduce this needless loss.

The majority of these deaths are situation reactions, and, if given momentary trained support, are potentially preventable.

SUICIDAL DEATHS

One hundred and forty deaths were ruled to have been due to suicide during the 1996-97 fiscal year. Of these, 1 was a vehicular death and is discussed in the "Vehicular Deaths" Section. The other suicide deaths are the basis for the tabulations in this Section. The number of individuals dying by each method of suicide are presented in Figure 18, page 41, and Table XX, page 42, and the percentages of all suicidal deaths by type are indicated in Table IX, page 42, along with alcohol and drug involvement for each mode.

Abuse Drug Involvement (Table XXI, page 42)

Abuse drugs were present 10 times in suicidal deaths in 1996-97 as compared to 26 times in 1995-96. The abuse drugs seen most frequently in suicidal deaths were cocaine (5 times) and heroin (3 times). This contrasts with 12 cases of suicide with cocaine present in 1995-96. Heroin (measured as morphine) was found in 8 cases of suicidal death in 1995-96. Abuse drugs were associated more frequently with deaths caused by drug overdose and by jumps from buildings than with any other means of suicide.

Racial Distribution (Table XXII and Figure 19, page 43)

Deaths from suicide occurred most frequently in whites (77% of total suicides). The white racial group has been divided into Hispanic and non-Hispanic in this tabulation. It can be seen that the white non-Hispanic group was involved in 70% of all suicides but in 90% of all suicides by drugs or poisons. Suicide by drug/poisons was used *less* frequently by blacks (3%) than would have been expected by the overall percentage of suicides by blacks (6%).

Age Distribution (Table XXIII, page 44, Table XXIV, page 45 and Figure 20, page 45)

There were 2 deaths by suicide in the 13-16 year age group during this fiscal year as compared to none in 1995-96. The 40-49 year age group had the highest number of suicides of any age group with deaths from drug overdoses and firearms constituting more than 50% of the total. Of special interest is the fact that the number of suicides in the 50-69 year age group decreased by 57%, from 42 in 1995-96 to 18 in 1996-97. There have not been these few cases in the last 10 fiscal years in this age group.

Distribution by Sex (Table XXV, page 46)

Males were more likely than females to commit suicide in 1996-97 (75% male, 25% female).

SUICIDES

Suicides are self-inflicted deaths. In San Francisco, the 139 suicides which are being tabulated account for 8.6% of the Medical Examiner death investigations for the fiscal year of 1996-97.

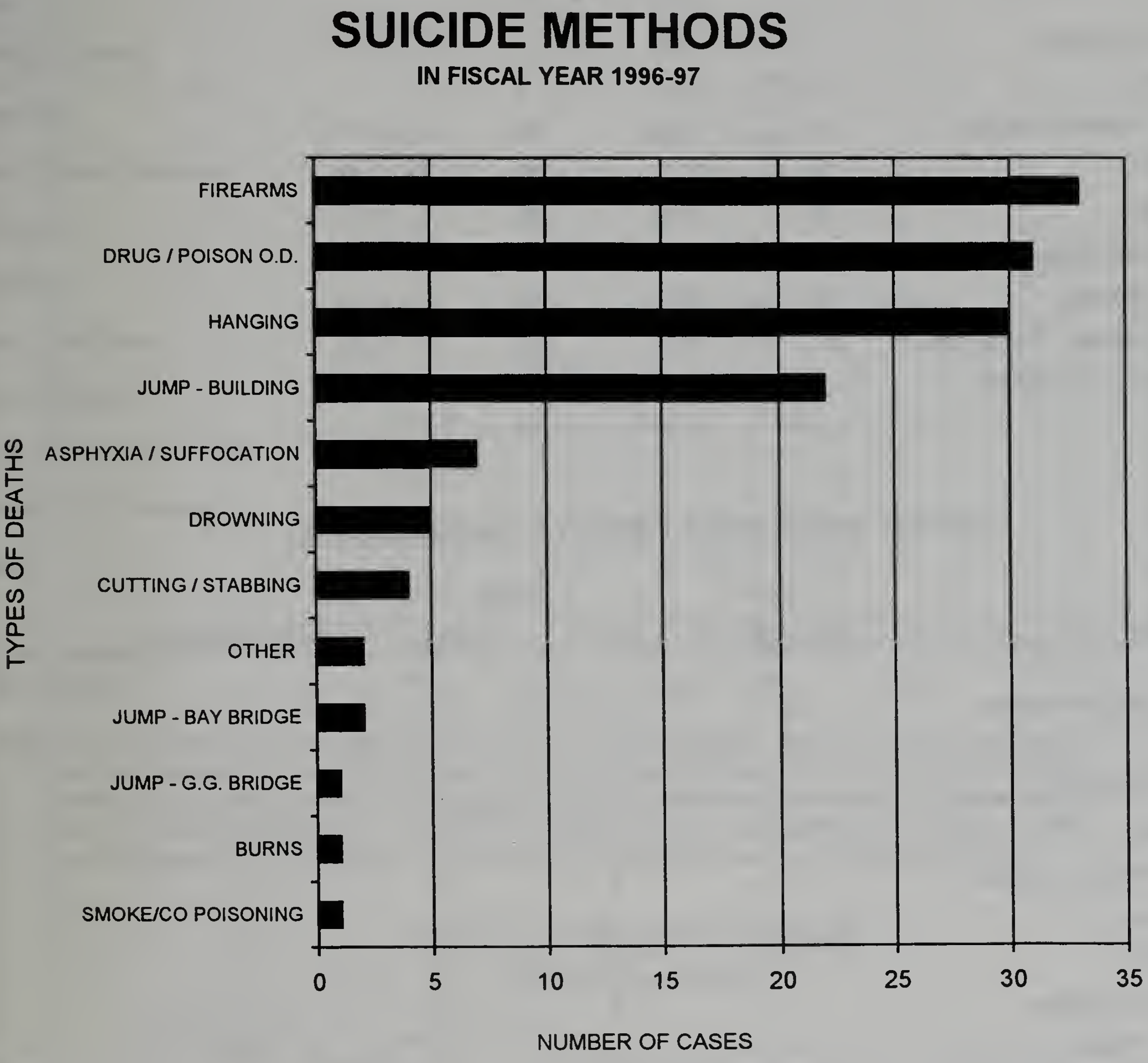


Figure 18.

TABLE XX. SUICIDAL DEATHS BY MODE

Method	Number	% Of Total Suicides	% With Alcohol	Ave. Alcohol Conc. (g%)	% With Abuse Drugs
		Abuse Drug and Alcohol Involvement			
Asphyxia / Suffocation	7	5.0	57	0.13	0
Burns	1	0.7	0	-	0
Cutting / Stabbing	4	2.9	0	-	0
Drowning	5	3.6	0	-	25
Drug / Poison Overdose	31	22.3	24	0.11	7
Firearms	33	23.7	30	0.12	0
Hanging	30	21.6	26	0.14	14
Jump - Bay Bridge	2	1.4	0	-	0
Jump - Building	22	15.8	18	0.14	18
Jump - Golden Gate Bridge	1	0.7	100	0.23	0
Smoke / CO Poisoning	1	0.7	100	0.56	0
Other	2	1.4	0	-	0

TABLE XXI. ABUSE DRUGS PRESENT IN SUICIDAL DEATHS

		Drugs		
Situation	**Cocaine**	**PCP**	**Heroin**	**Amphetamines**
Asphyxia / Suffocation	0	0	0	0
Burns	0	0	0	0
Cutting / Stabbing	0	0	0	0
Drowning	0	0	1	0
Drug / Poison Overdose	2	0	1	0
Firearms	0	0	0	0
Hanging	0	0	0	2
Jump - Bay Bridge	0	0	0	0
Jump - Building	3	0	1	0
Jump - Golden Gate Bridge	0	0	0	0
Smoke / CO Poisoning	0	0	0	0
Other	0	0	0	0
TOTALS	**5**	**0**	**3**	**2**

TABLE XXII. SUICIDE METHODS BY RACE

	Race					
Method	**W-NH**	**W-H**	**B-NH**	**ASIAN**	**OTHER**	**TOTALS**
Asphyxia / Suffocation	4 (57%)	1 (14%)	0	2 (29%)	0	7
Burns	1 (100%)	0	0	0	0	1
Cutting / Stabbing	3 (75%)	0	0	1 (25%)	0	4
Drowning	2 (40%)	0	1 (20%)	2 (40%)	0	5
Drug / Poison Overdose	28 (90%)	0	1 (3%)	2 (6%)	0	31
Firearms	25 (76%)	3 (9%)	3 (9%)	2 (6%)	0	33
Hanging	15 (50%)	3 (10%)	2 (7%)	9 (30%)	1 (3%)	30
Jump - Bay Bridge	0	2 (100%)	0	0	0	2
Jump - Building	17 (77%)	1 (5%)	1 (5%)	3 (14%)	0	22
Jump - Golden Gate Bridge	1 (100%)	0	0	0	0	1
Smoke / CO Poisoning	1 (100%)	0	0	0	0	1
Other	1 (50%)	0	0	1 (50%)	0	2
TOTAL NUMBER	**98**	**10**	**8**	**22**	**1**	**139**
% OF TOTALS	**(70%)**	**(7%)**	**(6%)**	**(16%)**	**(1%)**	

NOTE: Row percentages refer to percentages by race for each method. These can be compared to total percentages for each race to see whether a method is more or less prevalent in a racial group. For instance, suicides by hanging appear to occur *more* frequently in Asians (30%) than the general involvement of Asians in suicides (16%), and deaths by hanging in white non-Hispanics (50%) occur *less* frequently than all suicides in white non-Hispanics (70%).

RACE OF SUICIDE VICTIMS

FISCAL YEAR 1996-97

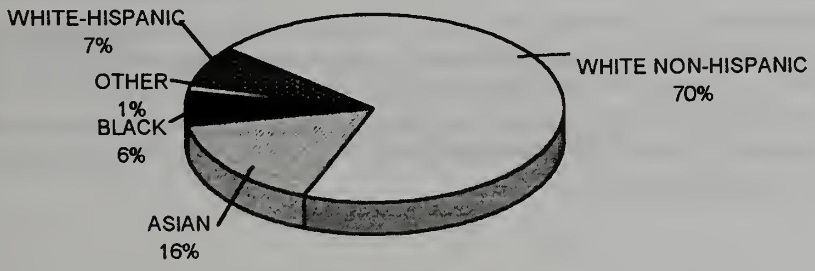


Figure 19.

TABLE XXIII. SUICIDE METHODS BY AGE

Age Range - Years

Method	13-16	17-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90 +
Asphyxia / Suffoc.	0	0	0	1 (14%)	4 (57%)	0	0	1 (14%)	1 (14%)	0
Burns	0	0	1 (100%)	0	0	0	0	0	0	0
Cutting / Stabbing	0	0	1 (25%)	0	0	0	1 (25%)	1 (25%)	1 (25%)	0
Drowning	0	0	0	1 (20%)	2 (40%)	1 (20%)	1 (20%)	0	0	0
Drug / Poison OD	0	0	3 (10%)	13 (42%)	9 (29%)	0	2 (6%)	2 (6%)	2 (6%)	0
Firearms	0	2 (6%)	4 (12%)	2 (6%)	10 (30%)	4 (12%)	2 (6%)	5 (15%)	0	4 (12%)
Hanging	1 (3%)	2 (7%)	8 (27%)	6 (20%)	3 (10%)	3 (10%)	1 (3%)	2 (7%)	4 (13%)	0
Jump - Bay Bridge	0	0	0	1 (50%)	1 (50%)	0	0	0	0	0
Jump - Building	1 (5%)	0	5 (23%)	4 (18%)	3 (14%)	2 (9%)	0	5 (23%)	1 (5%)	1 (5%)
Jump - G. G. Bridge	0	0	0	0	1 (100%)	0	0	0	0	0
Smoke / CO Poisoning	0	0	0	0	1 (100%)	0	0	0	0	0
Other	0	0	0	0	1 (50%)	1 (50%)	0	0	0	0
TOTAL NUMBER **% OF TOTAL**	**2** **(1%)**	**4** **(3%)**	**22** **(16%)**	**28** **(20%)**	**35** **(25%)**	**11** **(8%)**	**7** **(5%)**	**16** **(12%)**	**9** **(6%)**	**5** **(4%)**

NOTE: Row percents refer to percentage by age range for each method. These can be compared to total percentages for each age range to see if a method is more or less prevalent in an age group. For example, death by jumps from buildings appears to occur *more* frequently in the 70-79 years of age group (23%) than the general involvement of this age group in suicides (12%) while deaths by hanging in the 17-19 year age group (7%) occur *more* frequently than suicides by all means in this age group (3%).

SUICIDES

TABLE XXIV. AGE RANGES - COMPARISON BY YEAR

Age Range Years	'87-'88	'88-'89	'89-'90	'90-'91	'91-'92	'92-'93	'93-'94	'94-'95	'95-'96	'96-'97
0 - 19	6	3	1	2	6	2	5	3	5	6
20 - 29	36	30	18	20	28	14	30	18	21	22
30 - 39	28	33	39	37	34	32	31	29	27	28
40 - 49	24	28	30	23	30	36	20	27	39	35
50 - 59	23	22	12	29	14	13	23	18	29	11
60 - 69	19	19	11	15	12	12	12	11	13	7
70 - 79	17	21	6	19	17	14	7	9	14	16
80 - 89	5	11	7	8	9	8	7	7	7	9
90 - 99	4	3	4	1	3	1	1	2	1	5
Unknown	0	1	0	0	0	0	0	0	0	0

Figure 20.

SUICIDE VICTIMS BY AGE

FISCAL YEAR 1996-97

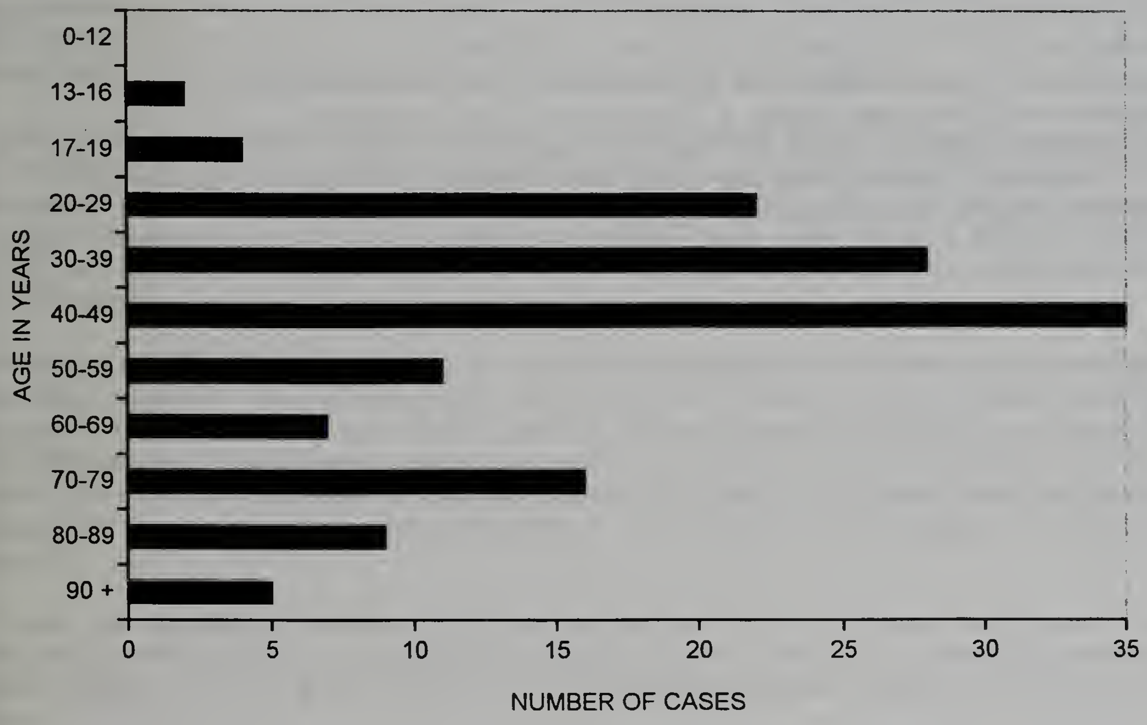


TABLE XXV. SUICIDE METHODS BY SEX

Method	Sex Male	Female
Asphyxia / Suffocation	3 (43%)	4 (57%)
Burns	0 (0%)	1 (100%)
Cutting / Stabbing	3 (75%)	1 (25%)
Drowning	4 (80%)	1 (20%)
Drug / Poison Overdose	19 (61%)	12 (39%)
Firearms	30 (91%)	3 (9%)
Hanging	23 (77%)	7 (23%)
Jump - Bay Bridge	2 (100%)	0 (0%)
Jump - Building	17 (77%)	5 (23%)
Jump - Golden Gate Bridge	1 (100%)	0 (0%)
Smoke / CO Poisoning	1 (100%)	0 (0%)
Other	1 (50%)	1 (50%)
TOTALS	**104 (75%)**	**35 (25%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths by firearms appear to occur *more* frequently in males (91%) than the general involvement of males in suicides (75%), while females die by suffocation *more* frequently (57%) than all suicides in females (25%).

HOMICIDE

Homicide is the killing of one human being by another. Murder is the unlawful killing of a human being with malice. The following data do not differentiate homicide as to whether it was justifiable, accidental, or murder. Such distinctions are the proper function of the judicial system and are not the responsibility or function of this office.

Any judicial system which deals with crimes involving death requires a well- trained staff and well-equipped Medical Examiner's Office which can and will interpret forensic findings in an unbiased, fair manner. Their investigation must be intense, accurate and rapid enough so that charges may be pursued or dismissed without unfairly affecting an individual's constitutional rights. That is the purpose of this office.

The proper evaluation and investigation of a homicide begins, naturally, at the scene. In the majority of cases, a staff member of this office (either the Investigator, Medical Examiner's Administrator, or Medical Examiner), determines whether a death is potentially a homicide. It has been well-documented that, if such a determination is made by an individual inexperienced or untrained in death investigation, his opinion will be wrong in 50% of the cases. Such a person is very apt to miss the subtle homicide and is more inclined to miscall a natural or accidental death as homicide, resulting in false arrest, false accusations, needless expenditure of public funds, waste of investigative time and delay in the investigation of other deaths.

The Investigator responds to the scene of death and determines whether the Police Homicide Detail will be called. When homicide is obvious, the Investigator responds as part of a team (other members include homicide investigators, photographers and criminologists). This office is responsible for the body, identification, inquiry into circumstances, manner and means of death (Gov. Code 27491.2). In addition to the scene investigation, the Investigator is responsible for recovering property, locating and notifying next of kin, and preparing a written summary of his/her investigation.

In about one-third to one-half of all homicides, a forensic pathologist will respond to the scene to aid in the investigation. The subsequent autopsy may also use photography, fluoroscopy, X-ray, angiography and other techniques to establish and define the number, nature and severity of wounds, to obtain evidence (i.e. bullets) and to prepare an official report. This report, including chemistry, serology and toxicology results, is used as part of the prosecution or defense of the case in the formal judicial hearing.

Pertaining to criminal trial, our judicial system requires identification of an individual and presentation of evidence, usually by virtue of expert testimony, relative to the cause of death or trauma associated with death. The Medical Examiner's Office identifies the body, frequently relying on local police, CII, or FBI fingerprints. Expert forensic testimony is given by the Forensic Pathologist from this office. In addition, the Forensic Toxicologist is frequently called upon to testify on the significance and effect of various drug levels, a matter of great importance when dealing with the concept of diminished capacity.

Of minor, but increasing importance, is the fact we are seeing more homicide and trauma cases transferred into the County for medical therapy because of San Francisco's excellent and advanced medical facilities. Should these individuals die, the autopsy and court testimony are done by this office.

HOMICIDE DEATHS

Seventy-four deaths were ruled to have been due to homicide during the 1996-97 fiscal year. Of these, 11 were vehicular homicides and have been discussed in the "Vehicular Deaths" section. The remaining 63 homicide deaths are the basis for the tabulations in this section. The numbers of individuals dying by each manner of death are indicated in Figure 21, page 49 and Table XXVI, page 50; percentages of all homicides represented by specific methods are indicated in Table XXVI, page 50. The total number of non-vehicular homicides decreased by 36% from 98 in 1995-96 to 63 in 1996-97. The number of homicide deaths by firearms decreased 20%, from 59 to 47. Of the homicide victims tested for alcohol and drugs (those in the hospital for less than 24 hours), more than one-third had positive blood alcohol levels; more than 25% had drugs present. The percent of homicide victims with positive blood tests for drugs varied with the method of homicide with more than 50% of those dying either by strangulation or blunt trauma having drugs present.

Abuse Drug Involvement (Table XXVII, page 50)

Cocaine was the abuse drug seen most frequently in homicide victims, being present in 17 homicide cases as compared to 38 such cases in 1995-96, a decrease of 55%. Cocaine was associated most strongly with deaths by gunshot wound, with 13 of the 17 cases with cocaine present (76%) being deaths due to gunshot wounds. Head trauma was the homicide method which was associated with drugs next most frequently. The number of homicide cases with amphetamines present decreased 67% from 6 in 1995-96 to 2 in 1996-97. Overall, the number of times abuse drugs were found to be present in homicide cases decreased 61% from 59 in 1995-96 to 23 in 1996-97.

Racial Distribution (Table XXVIII and Figure 22, page 51)

Deaths by homicide occurred more frequently in blacks (49%) than in whites (36%). Deaths resulting from firearms accounted for all homicides in Asians, 81% of homicides in blacks, and 65% of homicides in whites. Of great interest is the decrease seen in the number of Asian homicide victims, from 19 in 1995-96 to only 4 in 1996-97, a decrease of 79%.

Age Distribution (Figure 23, page 52, Tables XXIX and XXX, page 53 and Table XXXII, page 54)

There were 5 homicides in the 0-19 year age group, a decrease of 72% from 1994-95 to the lowest number in the last ten fiscal years. Also, the number of homicide deaths in the 20-39 year age groups decreased 38% from 1995-96 and is also the lowest number in the last ten fiscal years. Death by firearms accounted for 76% of the homicides in the 0-39 year age group. The peak occurrence of deaths due to firearms was in the 20-29 year age group. As can be seen from Table XXXII, the mean age of homicide victims varies with the mode, with no clear pattern seen for either males and females for any mode.

Distribution by Sex (Table XXXI, page 54)

Males were almost 4 times as likely as females to be homicide victims.

NON-VEHICULAR HOMICIDES

Homicides are those deaths caused by another person, generally resulting in murder and manslaughter charges. In San Francisco, 63 non-vehicular homicides occurred in 1996-97, accounting for 3.9% of the total Medical Examiner investigations.

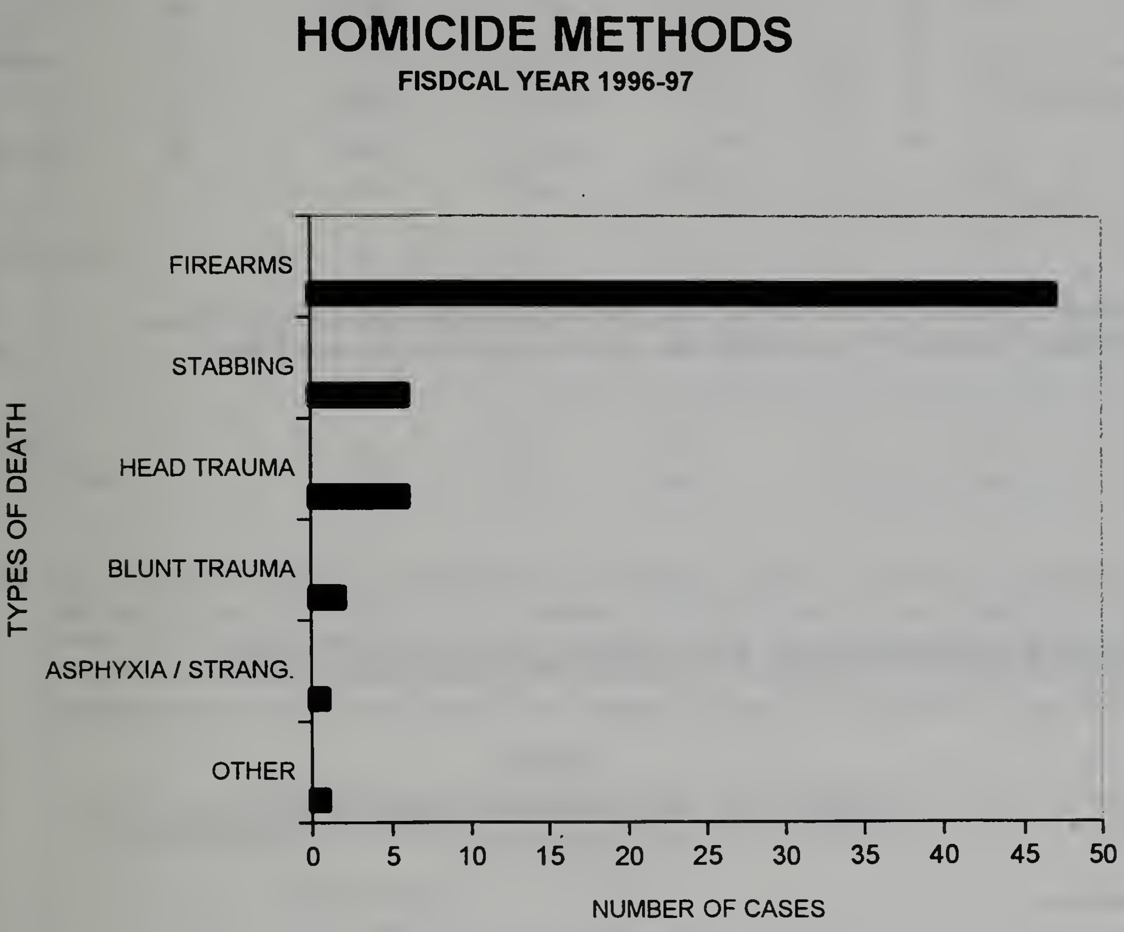


Figure 21.

TABLE XXVI. HOMICIDAL DEATHS BY MODE

Abuse Drug and Alcohol Involvement

Method	Number	% Of Total Homicides	% With Alcohol *	Ave. Alcohol Conc. (g%)	% With Drugs **
Firearms	47	75	34	0.09	34
Stabbing	6	10	40	0.09	20
Blunt Trauma	2	3	0	-	50
Asphyxia / Strangulation	1	< 2	100	0.23	100
Head Trauma	6	10	60	0.22	20
Other	1	< 2	-	-	-

* Refers to percentage of victims (of those tested) with positive blood ethyl alcohol concentrations

** Refers to percentage of victims (of those tested) with positive blood tests for abuse drugs.

TABLE XXVII. DRUGS PRESENT IN NON-VEHICULAR HOMICIDAL DEATHS

	Drugs			
Situation	Cocaine	PCP	Heroin	Amphetamines
Asphyxia / Strangulation	1	0	0	0
Traumatic Injuries	1	0	0	0
Gunshot Wound	13	0	3	2
Stabbing	1	0	0	0
Head Injury	1	0	1	0
TOTALS	**17**	**0**	**4**	**2**

TABLE XXVIII. HOMICIDE METHODS BY RACE

Method	W-NH	W-H	B-NH	Asian	Other	TOTAL
Asphyxia / Strangulation	1 (100%)	0	0	0	0	**1**
Head Trauma	1 (17%)	1 (17%)	3 (50%)	0	1 (17%)	**6**
Firearms	11 (23%)	4 (9%)	25 (53%)	4 (9%)	3 (6%)	**47**
Stabbing	1 (17%)	1 (17%)	3 (50%)	0	1 (17%)	**6**
Blunt Trauma	0	2 (100%)	0	0	0	**2**
Other	1 (100%)	0	0	0	0	**1**
TOTALS	**15**	**8**	**31**	**4**	**5**	**63**
% OF TOTAL	**23%**	**13%**	**49%**	**6%**	**8%**	

NOTE: Row percentages refer to percentages by race for each method. These can be compared to total percentages for each race to see whether a method is more or less prevalent in a racial group. For instance, death by firearms appears to occur *less* frequently in white Hispanics (9%) than the general involvement of white Hispanics in homicides (13%) while deaths due to firearms appear to occur *more* frequently in Asians (9%) than all homicides in Asians (6%).

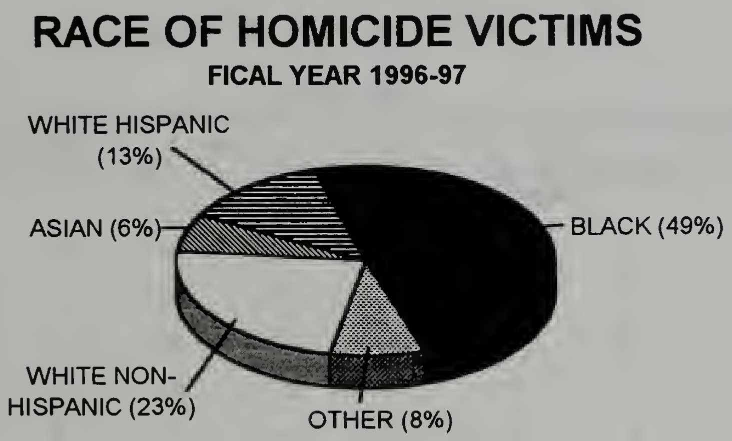


Figure 22.

HOMICIDE VICTIMS BY AGE

FISCAL YEAR 1996-97

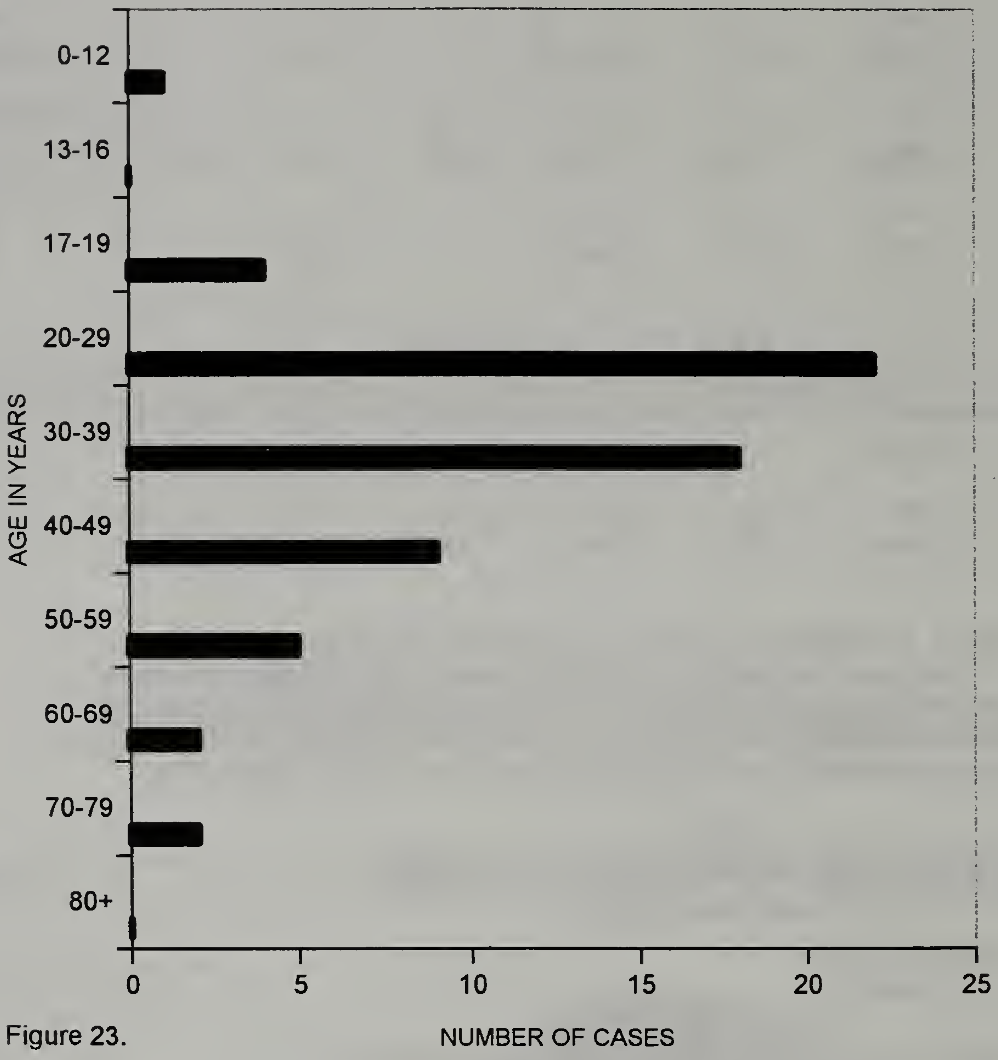


Figure 23.

TABLE XXIX. HOMICIDE METHODS BY AGE

Age Range - Years

Method	0-12	13-16	17-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Unk.
Asphyxia / Strangulation	0	0	0	0	0	1 (100%)	0	0	0	0	0
Head Trauma	0	0	0	0	1 (17%)	2 (33%)	1 (17%)	2 (33%)	0	0	0
Firearms	1 (2%)	0	3 (6%)	17 (36%)	15 (32%)	6 (13%)	3 (6%)	0	2 (4%)	0	0
Blunt Trauma	0	0	0	2 (100%)	0	0	0	0	0	0	0
Stabbing	0	0	1 (17%)	3 (50%)	2 (33%)	0	0	0	0	0	0
Other	0	0	0	0	0	0	1 (100%)	0	0	0	0
TOTALS	**1**	**0**	**4**	**22**	**18**	**9**	**5**	**2**	**2**	**0**	**0**
% OF TOTALS	**1.6%**	**(0%)**	**(6%)**	**(35%)**	**(29%)**	**(14%)**	**(8%)**	**(3%)**	**(3%)**	**(0%)**	

NOTE: Row percents refer to percentage by age range for each method. These can be compared to total percentages for each age range to see if a method is more or less prevalent in an age group. For example, deaths by stabbing occur *more* frequently in the 17-19 year age group (17%) than the general involvement of this age group in homicides (6%) while deaths by head trauma occur *less* frequently in the 30-39 year age group (17%) than all homicides in this age group (29%).

TABLE XXX. HOMICIDE VICTIMS

AGE RANGES - COMPARISON BY YEAR

Fiscal Year

Age Range Years	'87-'88	'88-'89	'89-'90	'90-'91	'91-'92	'92-'93	'93-'94	'94-'95	'95-'96	'96-'97
0-19	16	18	16	13	19	16	11	18	8	5
20-29	28	31	28	37	39	49	53	34	32	22
30-39	41	28	28	27	32	25	26	23	32	18
40-49	12	15	15	12	17	14	12	12	11	9
50-59	13	9	6	5	10	13	8	4	6	5
60-69	8	4	5	5	0	3	4	2	4	2
70+	5	2	6	5	6	7	4	0	5	2

TABLE XXXI. HOMICIDE METHODS BY SEX

Method	Sex Male		Female	
Asphyxia / Strangulation	0	(0%)	1	(100%)
Head Trauma	5	(83%)	1	(17%)
Firearms	39	(83%)	8	(17%)
Blunt Injury	1	(50%)	1	(50%)
Stabbing	4	(67%)	2	(33%)
Other	1	(100%)	0	(0%)
TOTALS	**50**	**(79%)**	**13**	**(21%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths by stabbing occur *more* frequently in females (33%) than the general involvement of females in homicides (21%), while deaths by firearms in males (83%) occur slightly *more* frequently than all homicides in males (79%).

TABLE XXXII. MEAN AGE FOR HOMICIDE VICTIMS BY METHOD AND SEX
(Age in Years)

Method	Male	Female
Asphyxia / Strangulation	-	49
Head Trauma	52	57
Firearms	33	42
Blunt Trauma	28	22
Stabbing	28	27
Other	54	-

The lowest mean age for **males** was seen in deaths from stabbing and blunt trauma.
The lowest mean age for **females** was seen in death by blunt trauma.

PATHOLOGY

In the **Pathology Department**, tissue and body fluid samples taken at autopsy are prepared for microscopic study, histochemically stained, or analyzed for chemical constituents. Cardiac pacemakers or other mechanical life-support devices are examined for any defect. Smears or "wet-mounts" are examined for spermatozoa, bacteria, or tuberculosis. Bacteriologic cultures may be taken. However, if pathogens are grown, they are usually sent to the Department of Public Health (State or local) for further identification. If indicated, "soft" X-rays or histochemical tests are done to establish entrance or exit gunshot wounds. New research techniques, such as methods of obtaining fingerprints from the skin of a victim, are developed here also.

MONTHLY FIGURES

Fiscal Year 1996-1997

PATHOLOGY*

Year	Total Med-Exam Cases	Cases Referred to Pathologist	No. of Organs Submitted	No. of Section Taken	Histo-Pathologic Slides Made	Special Stains **	Blood Typing ***	Other Determinations ****
1996								
July	120	79	410	945	403	34	11	124
Aug.	162	92	413	703	361	25	11	69
Sept.	127	86	244	468	234	28	13	122
Oct.	135	83	460	739	383	37	11	104
Nov.	145	88	377	668	350	16	12	88
Dec.	144	93	441	963	551	67	14	121
1997								
Jan.	144	83	545	794	546	62	10	60
Feb.	132	76	290	609	350	20	16	74
Mar.	132	79	623	1,112	516	30	8	107
April	111	67	419	763	371	20	4	71
May	142	80	669	1,087	529	57	10	85
June	125	85	590	1,007	491	55	11	74
TOTALS	**1,619**	**991**	**5,481**	**9,858**	**5,085**	**451**	**131**	*******1,229**

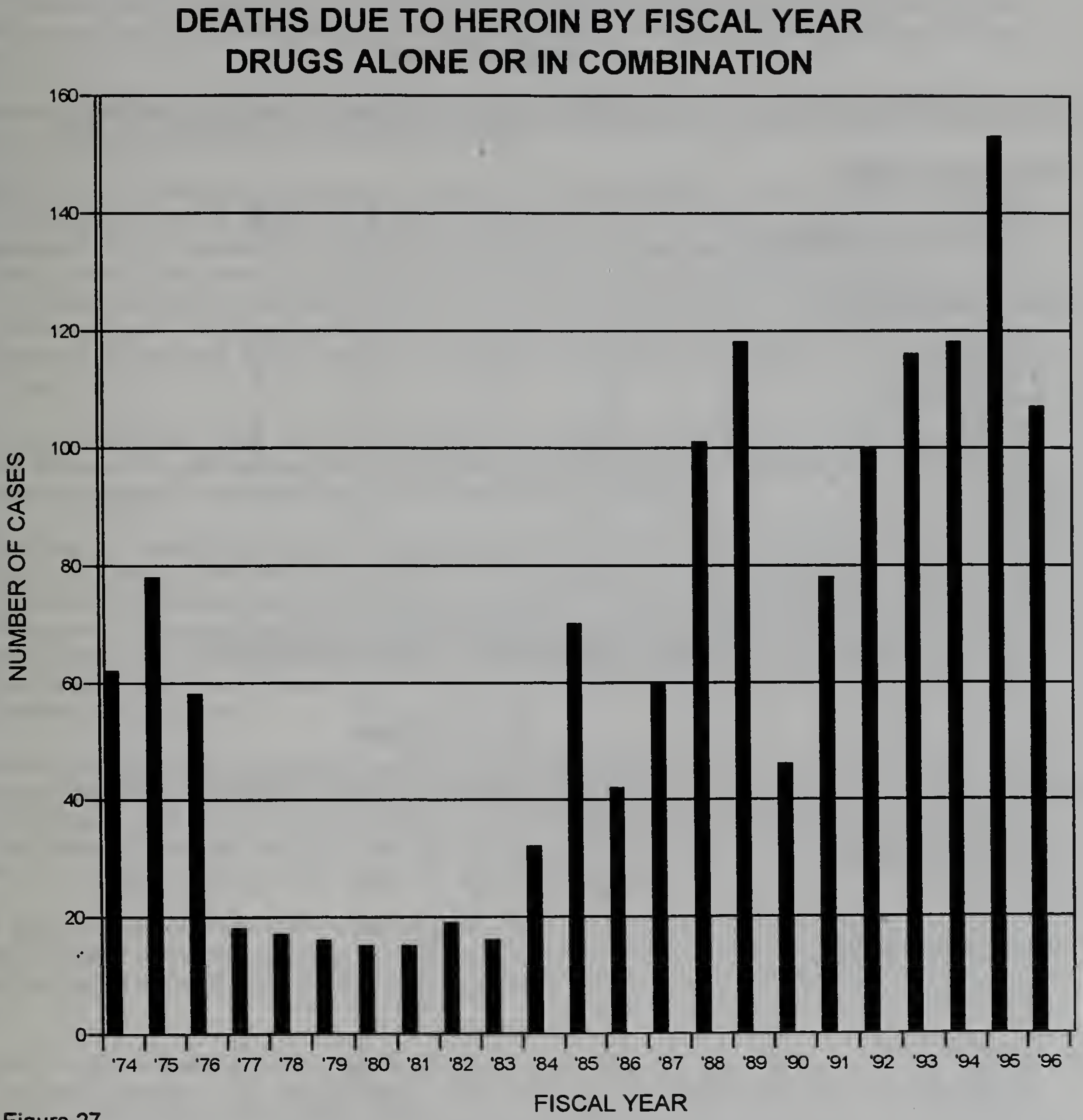
* These figures do not reflect photography, forensic radiology, or material prepared for teaching forensic patholog

** Includes smears examined for bacteria and spermatozoa

*** ABO and Anti-Rh typing + blood drawings

**** Blood, urine, water, evidence for: hematology, biochemistry, urinalysis, bacteriology, serology, "Sickledix," etc. + blood drawing

***** Total includes blood drawn (50) plus Bacteriology sent out (80) for an addition of 130.



DEATHS DUE TO HEROIN BY FISCAL YEAR
DRUGS ALONE OR IN COMBINATION

Figure 27.

TABLE XXXVIII. DEATHS INVOLVING AMPHETAMINES

AMPHETAMINES PRESENT ALONE

	Manner of Death				
CAUSE OF DEATH	ACC	SUI	HOM	UND	TOTAL
Drug Caused Deaths					
Overdose	2	0	0	0	2
Intracerebral Hemorrhage	1	0	0	0	1
Drug Related Deaths					
Drowning	1	0	0	0	1
Fall - Building	2	0	0	0	2
Gunshot Wound	0	0	1	0	1
Hanging	0	1	0	0	1
Motor Vehicle	2	0	0	0	2
TOTALS	**8**	**1**	**1**	**0**	**10**

AMPHETAMINES PRESENT IN COMBINATION WITH OTHER DRUGS

	Manner of Death				
CAUSE OF DEATH	ACC	SUI	HOM	UND	TOTAL
Drug Caused Deaths					
Overdose	18	0	0	1	19
Drug Related Deaths					
Drowning	1	0	0	0	1
Fall	1	0	0	0	1
Gunshot Wound	0	0	1	0	1
Hanging	0	1	0	0	1
Motor Vehicle	1	0	1	0	2
TOTALS	**21**	**1**	**2**	**1**	**25**

TOXICOLOGY

Toxicology is the study of the interaction of foreign compounds, such as drugs, with living organisms (e.g. people). It involves knowing something of the nature of that interaction, how the foreign compounds break down (that is, how they are metabolized), and what effects they have on the health and behavior of the organism.

All of this information is vital to the role that toxicology plays in determining the cause of death, as well as in evaluating the significance of chemicals found in the living.

Generated within the Toxicology Department is information on samples from Medical Examiner's cases as well as from suspects in criminal cases (e.g. homicides, driving under the influence, probation failure, (H & S 11550), assaults) and other persons to be tested at the request of various law enforcement agencies. The data obtained in these cases enable the toxicologist to assist in interpreting the behavior of the suspects involved, to advise the District Attorney, the Public Defender, the City Attorney, Police Department, the California Highway Patrol, and other agencies, and to give expert testimony in court as necessary in such cases as to the effect of drugs in the case. This application of toxicological facts to legal problems is Forensic Toxicology.

The Toxicology Department also performs analyses on samples submitted by the Police and Fire Departments in connection with the recruitment programs and other personnel requirements. The results in some cases are presented to the respective commission in official hearings.

Toxicological facts are determined through tests performed on biological samples (e.g. blood, urine, gastric contents, liver, etc.) taken at the time of autopsy or from living persons. The samples are subjected to a series of chemical manipulations designed to extract any drugs or other physiologically active compounds that may be present. The subsequent extracts are then examined by equipment set up to detect, accurately identify, and quantitate any materials that may be present. These determinations must be of unquestionable accuracy and as specific as scientifically possible, and they must be able to stand up to review by any other qualified laboratory in the nation.

The analytical methods most commonly used in the toxicological studies are gas and thin layer chromatography; ultraviolet, visible, and fluorescence spectrophotometry; and immunoassay techniques. Advanced techniques, such as mass spectrometry and HPLC (High Performance Liquid Chromatography) are used as necessary for confirmation of difficult samples. These precise and sophisticated methods require the use of advanced laboratory apparatus and highly trained personnel.

Levels of drugs in two or more body compartments (one of which is invariably blood) are routinely determined in order to answer the question of whether the drug use is acute or chronic. This approach is of the utmost importance in determining the time of ingestion and whether or not the intent of the ingestion was suicide.

The range of drugs available to the public is extremely wide, and the nature and type of compounds involved are highly variable. The methodologies necessary to conduct toxicological analyses have to be similarly wide-ranging and also continually expanded in order to keep up with the manufacture of new drugs, both legal and illegal. This is an important aspect of the Toxicology Department's work, often requiring extensive research. So, too, does the identification of "street-manufactured" compounds which are sometimes found in postmortem samples. Also, with many drugs being compounded to have physiologic effects at very low doses, detection in body fluids is often extremely difficult.

The most common drugs in the community are alcohol and prescription items. However, illegal, or "street", drugs (especially morphine-type alkaloids [e.g. heroin], cocaine, and amphetamines) represent a very significant percentage of the compounds actually found in the cases presented to the Toxicology Department. Less commonly used drugs, industrial materials, certain gases, and various other foreign compounds have also been detected.

TOXICOLOGY - MEDICAL EXAMINER'S CASES

July 1996 - June 1997

Incidence of drugs and other physiologically active material detected

The compounds listed are not necessarily the cause of death nor even a contributing factor. They are the toxic agents that were found to be present, either singly or in combination, in Medical Examiner's cases.

ABUSE DRUGS

Cocaine	132
Benzoylecgonine	145*
Morphine-type alkaloids	195
Codeine	123
Methamphetamine	43
Amphetamine	41
Phencyclidine (PCP)	1
Δ 9 - THC	3

ANTI-DEPRESSANTS

Amitriptyline (Elavil)	25
Nortriptyline (Aventyl)	33
Desipramine (Norpramin)	7
Imipramine (Tofranil)	3
Doxepin (Sinequan)	4
Fluoxetine (Prozac)	17
Trazodone (Desyrel)	3
Sertraline (Zoloft)	6

* Benzoylecgonine is not a drug of abuse. It is a metabolite of cocaine and is generally present when cocaine is detected. In some cases, benzoylecgonine, but not cocaine, was found which indicated that there had been some exposure to cocaine.

ANALGESICS - NARCOTIC

Methadone	28
Methadone Metabolite	26
Propoxyphene (Darvon)	9
Norpropoxyphene	11
Hydrocodone	14
Meperidine (Demerol)	5
Hydromorphone	2
Oxycodone	4
Fentanyl	4

ANALGESICS - NON-NARCOTIC

Acetaminophen	18
Salicylates	2

CARDIAC DRUGS

Lidocaine	49
Metoprolol	2
Propranolol (Inderal)	3
Quinidine	1
Mexitil	1

SEDATIVE-HYPNOTICS

Barbiturates

Secobarbital	9
Pentobarbital	2
Phenobarbital	8
Amobarbital	1

ANTIHISTAMINES

Diphenhydramine (Benadryl)	47
Doxylamine	7
Promethazine (Phenergan)	9
Chlorpheniramine	13

DECONGESTANTS

Phenylpropanolamine	4

BRONCHODILATORS

Ephedrine	21
Theophylline	1

Drugs Detected, Continued

ANTICONVULSANTS

Diphenylhydantoin (Dilantin)	14
Carbamazepine (Tegretol)	8
Valproic Acid	6

ANTIPSYCHOTIC AGENTS

Chlorpromazine (Thorazine)	1
Thioridazine (Mellaril)	2
Trifluoperazine	1

MISCELLANEOUS

Carbon Monoxide	9
Acetone	11
Carisoprodol	8
Isopropyl alcohol	1
Ethylene Glycol	1
Ketamine	3
Verapamil	1
Amantadine	1
Methapypilene	1

ANTI-ANXIETY AGENTS

Diazepam (Valium)	55
Nordiazepam	56
Chlordiazepoxide (Librium)	3
Temazepam (Restoril)	1
Alprazolam (Xanax)	4
N-Desalkylflurazepam	5
Hydroxyzine	2
Meprobamate	10
Flurazepam (Dalmane)	1
Midazolam	1
Lorazepam	4

TOXICOLOGY CASES

July 1996 - June 1997

Year / Month	Medical Examiner	Forensic Toxicology*	Total Cases	Total Tests Performed
1996				
July - September	409	290	699	7,959
October - December	424	296	720	7,998
1997				
January - March	411	270	681	7,381
April - June	375	263	638	7,126
TOTALS	**1,619**	**1,119**	**2,738**	**30,464**

* Cases in which specimens were referred to the Medical Examiner's Toxicology Laboratory for forensic toxicological examination generally were criminal cases in which the presence of drugs was suspected either in the victim or suspect of the crime. DUI, 11550, management control, out-of-county and other miscellaneous cases are included in this tabulation.

ABUSE DRUGS

The role of abuse drugs in deaths during the 1996-97 fiscal year is presented in this section. The four abuse drugs most commonly seen in Medical Examiner's cases - cocaine, heroin, amphetamines and PCP - will be examined. The number of cases in which these drugs were found either alone or in combination with other abuse drugs are presented in Table XXXII, page 65. In drug-caused deaths, heroin was the most frequently observed drug of abuse where drugs were present either alone or when drugs were present in combination.

Distribution by Sex (Table XXXIV, page 66)

In deaths caused by abuse drugs (DC = drug caused), where the drugs were present either singly or in combination, 67-100% of the deceased individuals were males, depending upon the abuse drug.

Distribution by Race (Table XXXIV, page 66)

White-Non-Hispanic (W-NH) - In drug-caused deaths where abuse drugs were present singly, the white non-Hispanic racial group predominated in deaths caused by heroin. In drug-caused deaths where abuse drugs were present in combination with other abuse drugs, the white non-Hispanic racial group predominated in deaths caused by all abuse drugs being studied.

Black/Non-Hispanic (B-NH) - In drug-caused deaths where abuse drugs were present singly, the black non-Hispanic racial group predominated in deaths caused by cocaine and amphetamines.

White-Hispanic (W-H) - This racial group was most heavily represented in drug-caused deaths and drug related deaths where cocaine was present alone.

Asians - There were no cases of deaths caused by, or related to, abuse drugs in this racial group during 1996-97.

Distribution by Age (Table XXXIV, page 66)

The lowest mean age was seen in drug-related deaths with heroin present in combination with other drugs (28.7 years) while the highest mean age was seen in drug-caused deaths with amphetamines present alone (54.7 years).

Alcohol Involvement (Table XXXIV, page 66)

The presence of alcohol in the blood of abuse drug users (drugs present singly) was most often associated with deaths caused by heroin alone (79%) and was least associated with deaths caused by amphetamines alone (33%).

Deaths Involving Cocaine (Figure 25, page 67 and Tables XXXV and XXXVI, page 68)

Cocaine *alone* was the cause of death in 5 cases by overdose, a decrease of 67% from 15 cases in 1995-96. Cocaine *alone* was also present in 21 drug-related deaths (See Table XXXV) including 7 ruled to be accidental, and 12 ruled to be by homicide. In 1995-96, cocaine was present in more than twice as many homicides (26). Of the 21 drug-related deaths, 9 (43%), were due to gunshot or stabbing.

Cocaine *in combination* with other drugs was the cause of death in 67 cases by overdose, a 26% decrease from 1995-96. Cocaine *in combination* was also present in 15 drug-related deaths (See Table XXXVI) including 4 cases ruled to be accidental, 3 cases ruled to be by suicide, and 7 cases ruled to be by homicide. Of these 15 deaths, 5 (33%) were due to gunshot or stabbing.

The number of deaths due to cocaine over the last 10 fiscal years is shown in Figure 25. It can be seen that the number of deaths due to cocaine decreased by 28 from 1995-96.

Deaths Involving Heroin (Figure 25, page 67 and Table XXXVII, page 70)

Heroin *alone* was the cause of death in 20 cases by overdose, a decrease of 44% from the preceding fiscal year. Heroin *alone* also was present in 4 drug-related deaths. The involvement of heroin *alone* in drug-related deaths was very low as compared to the involvement of cocaine or amphetamines in this type of death, both in number and manners of death.

Heroin *in combination* with other drugs was the cause of death in 78 cases by overdose, a 30% decrease from the previous fiscal year total of 111 cases. Heroin *in combination* was present in 7 drug-related deaths, 2 (29%) of which were due to gunshot.

The numbers of deaths due to heroin over the last 23 fiscal years are shown in Figure 27, page 72. The number of such deaths for 1996-97 is the lowest seen since 1992-93.

Deaths Involving Amphetamines (Figure 25, page 67 and Table XXXVIII, page 71)

Amphetamines *alone* were the cause of death in 2 cases by overdose the same number as in 1995-96. Amphetamines *alone* were also present in 7 drug-related deaths, only 1 of which (14%) was the result of gunshot or stabbing.

Amphetamines *in combination* with other drugs were the cause of death in 19 cases by overdose, a decrease of 17% from the previous fiscal year. Amphetamines *in combination* with other drugs were present in 6 drug-related deaths, 1 of which (17%) was due to gunshot or stabbing.

Abuse Drugs Present in Violent Deaths (See Figure 26, page 69)

Cocaine is the drug of abuse seen most frequently in deaths by homicide, suicide and vehicular deaths.

SAN FRANCISCO MEDICAL EXAMINER'S CASES

TABLE XXXIII. ABUSE DRUGS

Abuse Drugs Present Alone

Drug	Drug Caused Deaths	Drug Related Deaths	Role Unclear	Incidental Findings
Cocaine alone	12	21	6	4
Heroin alone	24	4	3	3
Amphetamines alone	3	8	1	2
PCP alone	0	0	0	0

Abuse Drugs Present in Combination with Other Drugs

Drug	Drug Caused Deaths	Drug Related Deaths	Role Unclear	Incidental Findings
Cocaine in combination	71	15	12	4
Heroin in combination	83	7	5	3
Amphetamines in combination	19	6	4	0
PCP in combination	0	1	0	0

TABLE XXXIV. ABUSE DRUGS

INCIDENCE BY SEX, RACE, AGE, AND ALCOHOL INVOLVEMENT

Drugs Present Singly

	SEX		RACE					
Drug	% M	% F	% W-NH	% W-H	%B-NH	Mean Age	% With Alcohol	Ave. Alc. Conc. (g%)
Cocaine - DC*	67	35	17	17	67	44.3	40	0.12
Cocaine - DR**	95	5	19	14	67	36.0	33	0.08
Heroin - DC*	88	12	67	8	17	42.9	79	0.17
Heroin - DR**	100	0	25	0	75	34.5	25	0.23
Amphet. - DC*	100	0	33	0	67	54.7	33	0.04
Amphet. -DR**	88	12	62	12	25	39.0	12	0.07
PCP - DC*	NONE							
PCP - DR**	NONE							

Drugs Present in Combination

	SEX		RACE					
Drug	% M	% F	% W-NH	% W-H	%B-NH	Mean Age	% With Alcohol	Ave. Alc. Conc. (g%)
Cocaine+ - DC*	76	24	61	3	37	39.8	54	0.14
Cocaine+ - DR**	87	13	60	7	33	38.5	57	0.14
Heroin+ - DC*	77	23	67	2	30	38.6	51	0.13
Heroin+ - DR**	86	14	43	0	43	28.7	43	0.14
Amphet.+ - DC*	84	16	79	0	16	36.2	47	0.10
Amphet.+ - DR**	100	0	83	0	0	38.7	0	-
PCP+ - DC*	0	0	0	0	0	-	-	-
PCP+ - DR**	100	0	0	100	0	36.0	0	-

* DC = Drug Caused
** DR = Drug Related

DEATHS DUE TO AMPHETAMINES, COCAINE AND HEROIN
BY FISCAL YEAR

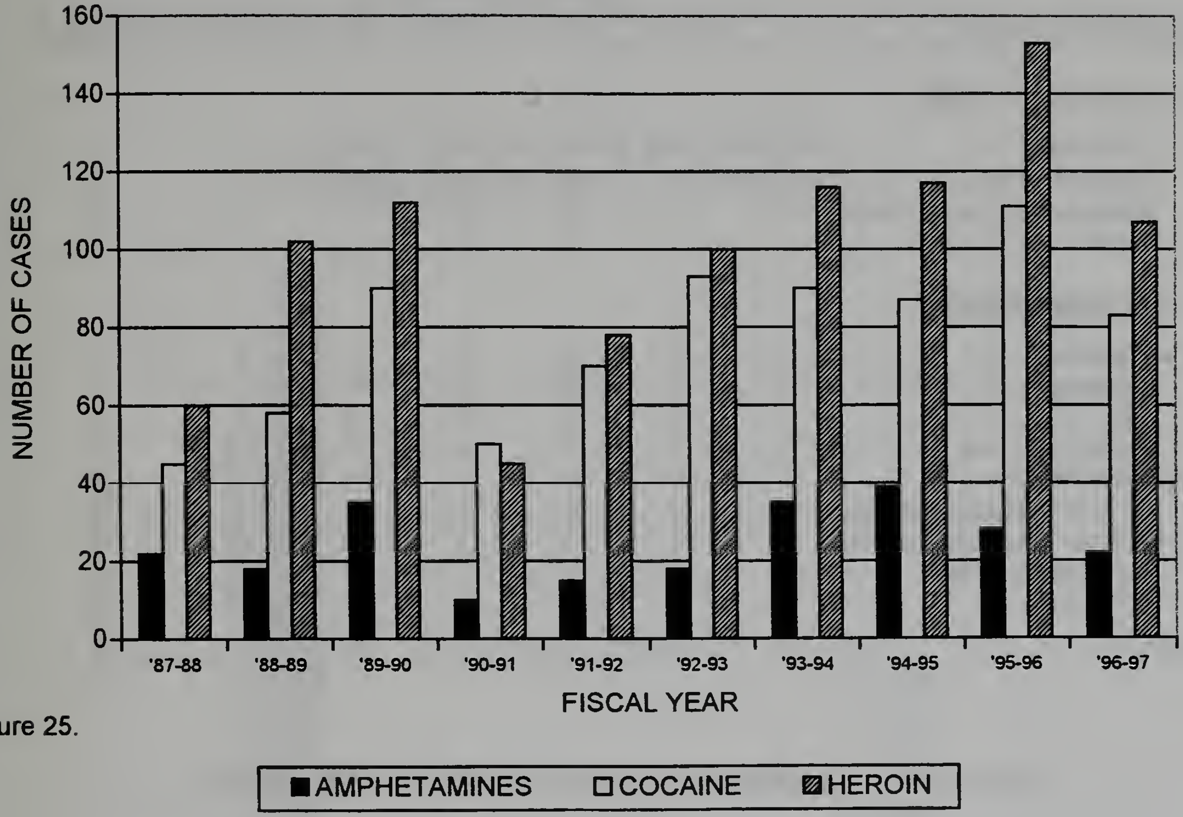


Figure 25.

DEATHS INVOLVING COCAINE

TABLE XXXV. COCAINE PRESENT ALONE

	Manner of Death					
CAUSE OF DEATH	ACC	SUI	HOM	NC	UND	TOTALS
Drug Caused Deaths						
Overdose	5	0	0	0	0	5
Cardiomyopathy	1	0	0	0	0	1
Intracerebral Hemorrhage	5	0	0	0	0	5
Sepsis	1	0	0	0	0	1
Drug Related Deaths						
Asphyxia	1	0	0	0	0	1
Drowning	1	0	0	0	0	1
Fall	3	0	0	0	0	3
Gunshot Wound	0	0	8	0	0	8
Head Trauma	0	0	1	0	0	1
Intracerebral Hemorrhage	0	0	0	2	0	2
Multiple Traumatic Injuries	0	0	1	0	0	1
Stabbing / Cutting	0	0	1	0	0	1
Vehicular	2	0	1	0	0	3
TOTALS	**19**	**0**	**12**	**2**	**0**	**33**

TABLE XXXV. COCAINE IN COMBINATION WITH OTHER DRUGS

	Manner of Death					
CAUSE OF DEATH	ACC	SUI	HOM	NC	UND	TOTALS
Drug Caused Deaths						
Overdose	62	1	0	0	4	67
Arteriosclerotic Cardiovascular Disease	1	0	0	0	0	1
Fasciitis	1	0	0	0	0	1
Intracerebral hemorrhage	1	0	0	0	0	1
Sepsis	1	0	0	0	0	1
Drug Related Deaths						
Fall / Jump - Building	1	3	0	0	1	5
Gunshot Wound	0	0	5	0	0	5
Sepsis	1	0	0	0	0	1
Strangulation	0	0	1	0	0	1
Vehicular	2	0	1	0	0	3
TOTALS	**70**	**4**	**7**	**0**	**5**	**86**

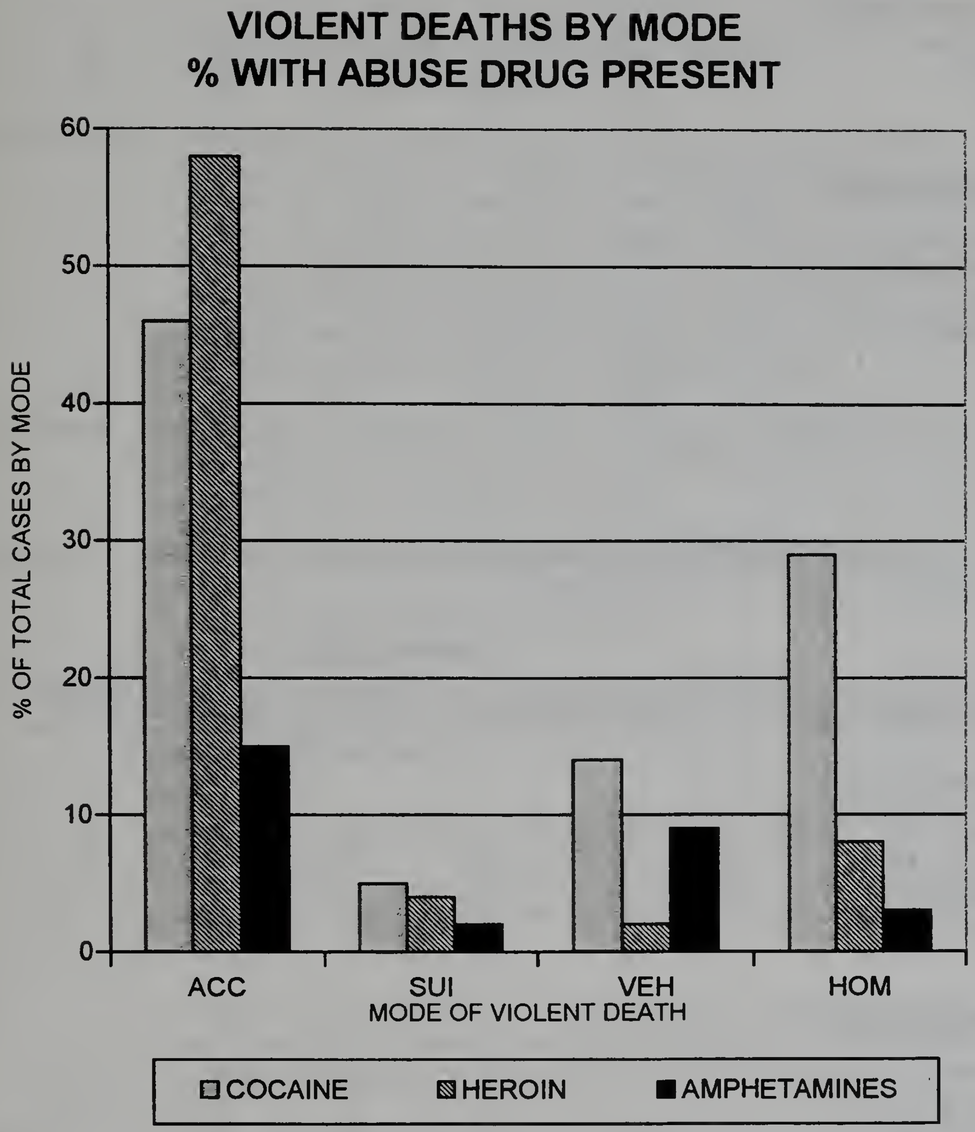

VIOLENT DEATHS BY MODE
% WITH ABUSE DRUG PRESENT
% OF TOTAL CASES BY MODE
60
50
40
30
20
10
0
ACC
SUI
VEH
HOM
MODE OF VIOLENT DEATH
▢ COCAINE
▨ HEROIN
■ AMPHETAMINES

Figure 26.

TABLE XXXVII. DEATHS INVOLVING HEROIN

HEROIN PRESENT ALONE

	Manner of Death				
CAUSE OF DEATH	**ACC**	**SUI**	**HOM**	**UND**	**TOTAL**
Drug Caused Deaths					
Overdose	20	0	0	0	20
Fasciitis	1	0	0	0	1
Sepsis	3	0	0	0	3
Drug Related Deaths					
Drowning	0	1	0	0	1
Gunshot Wound	0	0	1	0	1
Hanging	0	1	0	0	1
Head Trauma	0	0	1	0	1
TOTALS	**24**	**2**	**2**	**0**	**28**

HEROIN PRESENT IN COMBINATION WITH OTHER DRUGS

	Manner of Death				
CAUSE OF DEATH	**ACC**	**SUI**	**HOM**	**UND**	**TOTAL**
Drug Caused Deaths					
Overdose	76	1	0	1	78
Cardiomyopathy	1	0	0	0	1
Cor Pulmonale	1	0	0	0	1
Fasciitis	1	0	0	0	1
Sepsis	2	0	0	0	2
Drug Related Deaths					
Drowning	1	0	0	0	1
Fall / Jump - Building	1	1	0	0	2
Gunshot Wound	0	0	2	0	2
Motor Vehicle	1	0	1	0	2
TOTALS	**84**	**2**	**3**	**1**	**90**

GLOSSARY

ALKALOID OF MORPHINE GROUP	Typically referred to as morphine-type alkaloid, it is the chemical substance found in body fluids after the injection of heroin or other drugs derived from opium
AUTOPSY	A scientific dissection of the human body to determine the cause and nature of death in order to detect public health hazards, determine the method or type of death in homicides and improve the level of medical care in the community. In some cases, showing that no injury or wrongdoing was present is of great emotional and stabilizing value to the family
FORENSIC PATHOLOGY	The specialty field of medicine involving the application of medical and pathology principles in determining the cause and manner of sudden, unexpected, and medically unattended deaths. This includes the type and nature of injury, public health hazards, type or nature of homicide weapon, the relation of injury to death and interpreting other factors for the court. These data are prepared and presented to the judicial system or public health interests in keeping with the best available knowledge
MEDICAL EXAMINER	A physician specifically trained in forensic pathology who is responsible for investigating and determining the cause and manner of sudden or unexpected death
MODE OF DEATH	Indicates the manner of death, such as natural, accident, suicide or homicide, and is to be distinguished from cause of death, which is purely a medical determination
MODE UNDETERMINED	With the cause of death determined, investigative data do not clearly support one of two possible modes and either one is possible without prejudice
PATHOLOGY	That branch of medicine which deals with the essential nature of disease, especially in the structural or functional changes in tissues, organs or systems of the body causing disease. It involves the diagnosis of disease by microscopic or chemical analysis
SEROLOGY	That branch of pathology which deals with the analysis of blood and body fluids. Blood types for identification, exclusion of a suspect or judicial purposes are examples of the use in this office
TOXICOLOGY	The scientific study of poisons, their detection, actions and treatment. The relationship of drug levels to emotional or personality change, behavioral or reasoning ability are frequent decisions based on these data
TOXICOLOGY NOT VALID OR ELIMINATED	This term indicates that the deceased lived long enough after the injury to have eliminated some or all toxic agents from the body

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ANNUAL REPORT

July 1, 1997 - June 30, 1998

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MEDICAL EXAMINER'S OFFICE

City and County of San Francisco, California

ANNUAL REPORT

July 1, 1997 - June 30, 1998

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City and County of San Francisco **Chief Medical Examiner**

January 1999

The Honorable Willie L. Brown, Jr., Mayor
The Honorable Board of Supervisors
Director of Administrative Services
City and County of San Francisco
San Francisco, CA 94102

Dear Mayor Brown, Honorable Supervisors and Director of Administrative Services:

The attached Annual Report covers the fiscal year 1997-98. Among the significant activities for the Medical Examiner's Office during the fiscal year was the initiation of the process of re-staffing the Department after the budget reductions in the past years, as well as the continued process of upgrading our equipment and capabilities to meet the forensic requirements of the judicial system.

Additionally, all personnel have started the process of training for disaster response, and we have been aggressively working on a disaster response program. A local area network was set up for the office which began the process of allowing for better utilization of the database of the office for investigative and public health purposes. Although we have at times been significantly short-staffed, the personnel have worked together as a team to fulfill our legal and medical obligations to the taxpayers of the County.

Sincerely,

Boyd G. Stephens, M.D.
Chief Medical Examiner

Hall of Justice • 850 Bryant Street • San Francisco • CA 94103-4603 • Phone (415) 553-1694 • Fax (415) 553-1650

ACCREDITED NATIONAL ASSOCIATION OF MEDICAL EXAMINERS

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INTRODUCTION

The **Medical Examiner** is appointed by law to many responsibilities, the foremost of which is the investigation and certification of a variety of deaths including all deaths of other than natural causation, and any apparently natural deaths in which no physician can reasonably state the cause. The Medical Examiner can utilize any and all medico-legal investigative techniques, including autopsy, to establish both the medical cause of death, and mode or circumstances of death (natural, accident, homicide, suicide or undetermined).

The deaths which must be reported to the Medical Examiner, as required by various sections of the Government, Health and Safety and Penal codes, are as follows:

1. Homicide - known or suspected
2. Suicide - known or suspected
3. Following accident or injury (whether the accident or injury is the primary cause or contributory, with death occurring immediately or at some remote time)
4. Medical attendance of less than 20 days
5. No physician in attendance
6. Physician unable to state the cause of death (must be unable, not merely unwilling)
7. Poisoning (food, chemical, drug, therapeutic agents)
8. Occupational or industrial deaths
9. All deaths where a patient has not fully recovered from an anesthetic, whether in surgery, recovery room, or elsewhere
10. All deaths in operating rooms
11. All solitary deaths (unattended by physicians or other person in the period immediately preceding death)
12. All deaths in which the patient is comatose throughout the period of the physician's attendance
13. All deaths of unidentified persons
14. All deaths in which there are grounds to suspect that the death occurred in any degree from a criminal act
15. All deaths involving contagious disease - known or suspected - and constituting a public health hazard
16. Deaths in prison or while under sentence
17. All deaths associated with a rape - known or alleged - or crime against nature
18. All deaths related to or following abortion - known or suspected
19. All deaths involving drowning, fire, hanging, gunshot, stabbing, cutting, starvation, exposure, alcoholism, drug addiction, strangulation or aspiration

Additional mandated responsibilities include protecting and safekeeping of property belonging to deceased individuals, conducting inquests when indicated, maintaining proper public records, making reports to other agencies, identification of deceased persons, interment of indigent dead, and many other death related activities.

FORENSIC MEDICINE

Forensic medicine generally is considered to be a marriage of medicine and the forensic sciences oriented to medico-legal issues. The field is wide-ranging and growing, becoming even broader in scope than the traditional concept as practiced in Europe. As a Medical Examiner, we commonly examine living persons for medico-legal purposes, often interpreting the findings for court purposes.

There has been continued growth and accentuation of the role of forensic medicine in the legal and medico-legal world over the past year. This office has continued its role in forensic medicine for both living and dead, playing a vital role in the community.

We serve in a number of places in the community. Some of these include:

Examination and diagnosis of the living:

- Examination and evaluation of child abuse
- Examination and evaluation of sexual assault injuries
- Examination and evaluation of spousal abuse
- Evaluation of citizens' complaints against the Police Department
- Testimony and interpretation of hospital records and procedures
- Evaluation of force and patterned injuries
- Examination of victims and suspects for trace evidence and injuries
- Collection of blood from suspects and victims for serology, toxicology and other testing
- Court testimony on force, great body injury (GBI) and other issues
- Alcohol and drug interaction in driving under the influence cases and related issues
- Physiologic effects of drug interactions
- Toxicology, including environmental and industrial toxicities
- Teaching - hospitals, forensic, law enforcement, community
- Analysis for drugs on individuals on probation
- Analysis for drugs on management control cases for the County

Examination and evaluation of the dead:

- Scene investigation, reconstruction and analysis
- Evidence collection and testing
- Blood spatter analysis and interpretation
- Patterned evidence analysis and interpretation
- Trace evidence collection
- Time and place of death information
- Forensic autopsy - consultation and interpretation
- Analysis for chemical and limited serology testing
- Forensic toxicology
- Consultation with District Attorney and Public Defender
- Reconstruction Analysis and court presentation
- Teaching - forensic and legal

DEPARTMENT STATUS AND FUTURE

The principal responsibility for the current and immediate year is to upgrade instrumentation and procedures in the Toxicology, Pathology and Autopsy Departments. The LAN was upgraded and increased capability; however, we plan to use the old LAN to set up a laboratory information system for the Toxicology Laboratory that will couple all of the instruments into a common reporting system.

In progress is the establishment of an automatic program for recording and monitoring all evidence and property handled within the Department. This system will print the necessary labels for all specimens and evidence, keep track of all property (whether in custody or released), better utilize staff time, and aid in the security of all evidence.

All personnel are fully-trained in the bloodborne pathogen regulations and standards and are in compliance.

The refrigeration refurbishment program has been completed, and all refrigeration systems are on-line and backed up.

The Department continues to work with the Sudden Infant Death Program to aid in the investigation of all sudden deaths of infants in which natural death in not evident from medical history, as well as to continue the Back to Sleep Campaign especially targeting the African-American Community. The Back to Sleep Campaign in America has been extremely beneficial with the reduction of death rates in most communities (50 percent or more); however, African-American deaths of infants still continue to be high and relatively unchanged; therefore, the State and County programs will target that group of parents.

The Department now has access to scanning electron microscopy as an aid in investigation of cases and plans to fully utilize that instrument in the future.

DEPARTMENTAL COSTS

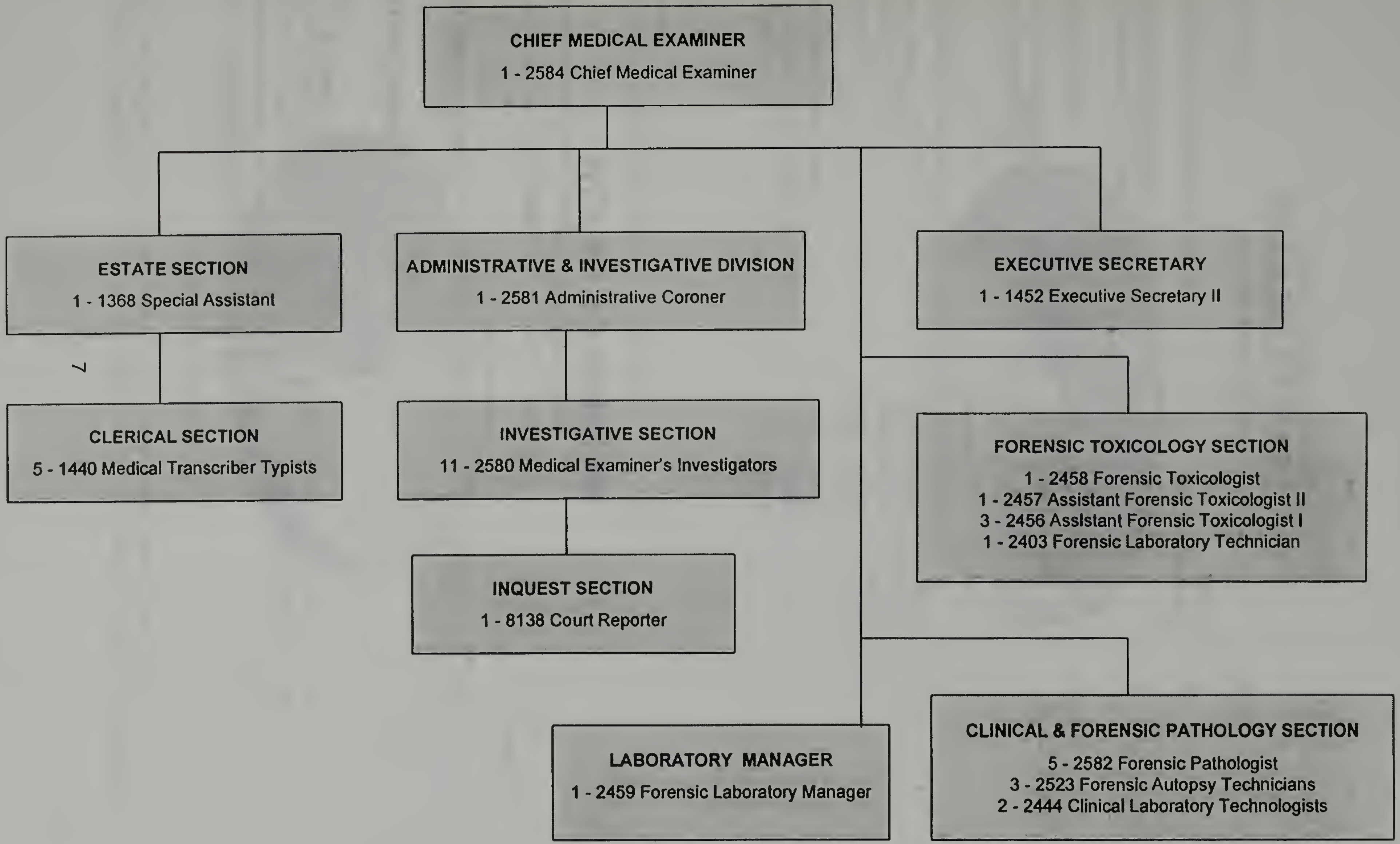
FISCAL YEAR 1997 - 1998

Total Budget	$3,572,546.00
Transfers to Controller: Health and Retirement	$506,281.00
Net Budget (all other costs)	$3,066,265.00
Total Cases	4,491
Cost Per Case Investigated	$682.76
Revenues (sales of records, public auctions, fee-for-service work)	$231,534.00
Total Costs Ad Valorum Taxes Per Case Investigate	$631.20

As indicated elsewhere, this includes all investigative, administrative, scientific and expert witness costs to the County.

ORGANIZATIONAL CHART

Medical Examiner's Office



CHIEF MEDICAL EXAMINER
1 - 2584 Chief Medical Examiner

ESTATE SECTION
1 - 1368 Special Assistant

CLERICAL SECTION
5 - 1440 Medical Transcriber Typists

ADMINISTRATIVE & INVESTIGATIVE DIVISION
1 - 2581 Administrative Coroner

INVESTIGATIVE SECTION
11 - 2580 Medical Examiner's Investigators

INQUEST SECTION
1 - 8138 Court Reporter

EXECUTIVE SECRETARY
1 - 1452 Executive Secretary II

FORENSIC TOXICOLOGY SECTION
1 - 2458 Forensic Toxicologist
1 - 2457 Assistant Forensic Toxicologist II
3 - 2456 Assistant Forensic Toxicologist I
1 - 2403 Forensic Laboratory Technician

LABORATORY MANAGER
1 - 2459 Forensic Laboratory Manager

CLINICAL & FORENSIC PATHOLOGY SECTION
5 - 2582 Forensic Pathologist
3 - 2523 Forensic Autopsy Technicians
2 - 2444 Clinical Laboratory Technologists

Figure 1.

COUNTY DEATHS

FISCAL YEAR 1997-98

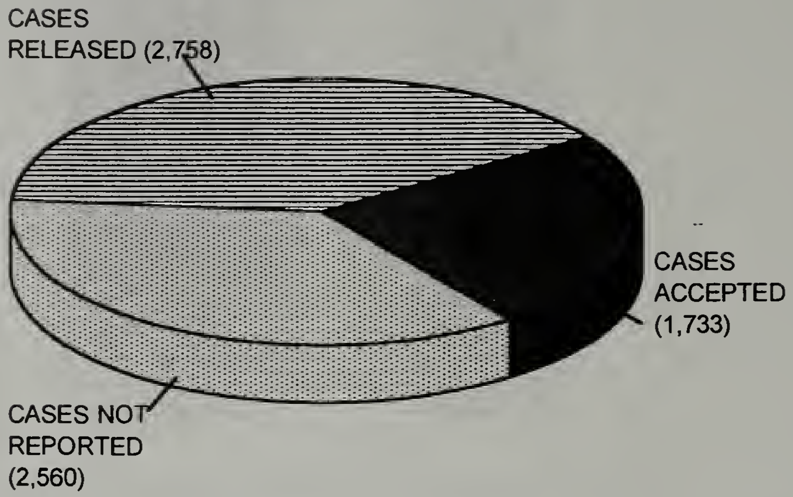
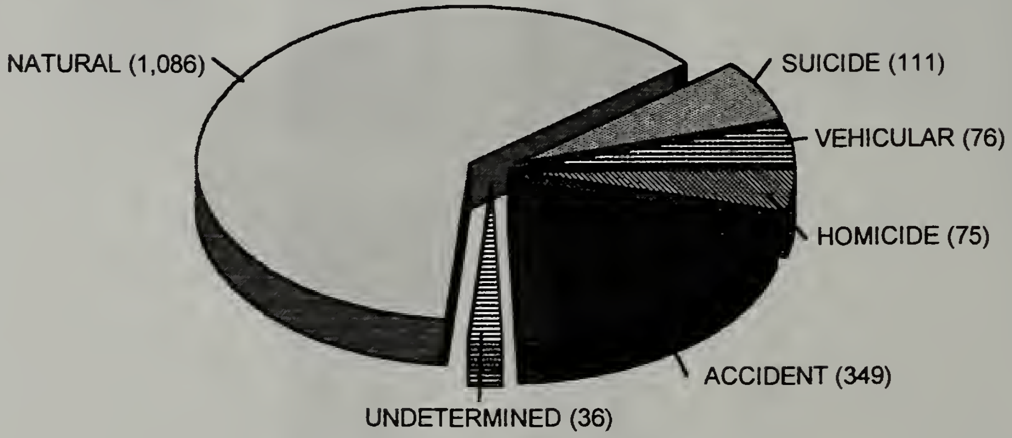


Figure 2.

MANNER OF DEATH

FISCAL YEAR 1997-98

JURISDICTION ON 1,733 CASES



FISCAL YEAR 1997-98

Total Deaths in County		7,051
Total Deaths Reported to Medical Examiner		4,491
Cases Reported, Investigated and Cleared by the Medical Examiner for physician's signature		2,758
Medical Examiner's Cases		1,733
% County Deaths Reported to Medical Examiner	63.7 %	
% County Deaths Having Medical Examiner's Jurisdiction	24.6 %	

Cases Accepted by the Medical Examiner (by manner of death) *

1. Natural Deaths (NC)	1,079	(62.3%)
2. Accidents (ACC)	349	(20.1%)
3. Suicides (SUI)	111	(6.4%)
4. Homicides (HOM)	75	(4.3%)
5. Mode Undetermined (UND)	36	(2.1%)
6. Sudden Infant Death Syndrome (SIDS)	7	(0.4%)
7. Vehicular (VEH)	76	(4.4%)

Autopsy Index

Full Autopsy	58%
Partial Autopsy / External Examination / Record Review **	42%

Dispositions Authorized by the Medical Examiner

1. Indigents and fetus dispositions Adults - 209 Infants - 3	212
2. Cases buried by funeral home with Public Administrator-controlled funds	52

Inquests Held or Depositions Taken	23

Identification

1. Persons brought to Medical Examiner's Office with insufficient identification	189
2. Persons subsequently identified by fingerprints, dental X-rays or other means	188
3. Persons interred as unidentified	1
4. Fingerprints taken and forwarded to FBI, CII, or SFPD	1,750

---

* The abbreviations following each manner of death will be used in most tables in this report.

** Includes 80 indigent cases all of whom were externally examined by a Medical Examiner's Investigator

EXAMINATIONS AND REFERRALS

FISCAL YEAR 1997-98

Examinations

Suspected child abuse	3

Specimens submitted for toxicology testing from living individuals

Living victims or defendants in violent crimes	70
Management control - other City departments	888
DUI suspects	657

MEDICAL EXAMINER CASES

FISCAL YEAR 1997-98

In fiscal year 1997-98, there were 7,051 deaths in San Francisco County. Of these deaths, 4,491 were reported to the San Francisco Medical Examiner's Office. The Medical Examiner's Investigators examined the previous medical history, circumstances surrounding the deaths and, in many cases, the scene of the death, and determined that 1,733 of these deaths came under the jurisdiction of this office. (See Figure 1, page 8). Full or partial autopsies or external examinations were performed on all cases.

1. The highest total **number of deaths** occurred in December 1997 and January 1998. The highest number for the various manners of death occurred during other months (e.g., highest number of homicides in July 1997, suicides in March 1998, the highest numbers of vehicular deaths in May 1998, and non-vehicular accidents in December 1997). See Table I and Figure 3, page 12.

2. The **racial distribution** for each manner of death was quite variable. For example, the value of the ratio of whites/blacks was 3.4 overall, 2.9 for accidents, 10.9 for suicides (as compared to 27.8 for 1989-90 and 13.5 for 1996-97) and 1.3 for homicides. See Table II, page 13 and Figure 5, Page 15.

3. The **age range distribution** for each manner of death was also variable. For example, the highest number of accidental deaths and suicides occurred in the 40-49 year age group, the highest number of homicides and the highest number of vehicular deaths occurred in the 20-29 year age group. See Table III, page 13.

4. The **overall distribution** of deaths by sex (ratio of male/female) was 1.9, but this varied by manner of death from 5.8 in deaths due to homicides to 2.1 in suicide deaths. See Table IV and Figure 4, page 14.

MEDICAL EXAMINER CASES FOR 1997-98

TABLE I. MANNER OF DEATH - MONTHLY COMPARISON

	Manner of Death							
Month of Death	**ACC**	**HOM**	**SUI**	**NC**	**VEH***	**SIDS****	**UND**	**TOTALS**
July	26	8	9	84	4	0	3	134
August	27	10	5	73	8	1	7	131
September	36	6	12	88	7	0	1	150
October	24	6	13	90	7	0	1	141
November	29	4	11	82	6	1	3	136
December	39	5	7	117	5	0	2	175
January	30	9	6	119	8	0	3	175
February	32	5	8	100	7	1	2	155
March	22	4	15	90	5	2	4	142
April	23	4	9	67	5	0	3	111
May	34	8	8	85	10	1	4	150
June	27	6	8	84	4	1	3	133
TOTALS	**349**	**75**	**111**	**1,079**	**76**	**7**	**36**	**1,733**

* = Vehicular Death. These include 7 deaths ruled to be homicide and 69 cases ruled to be accidental.
** = Sudden Infant Death Syndrome

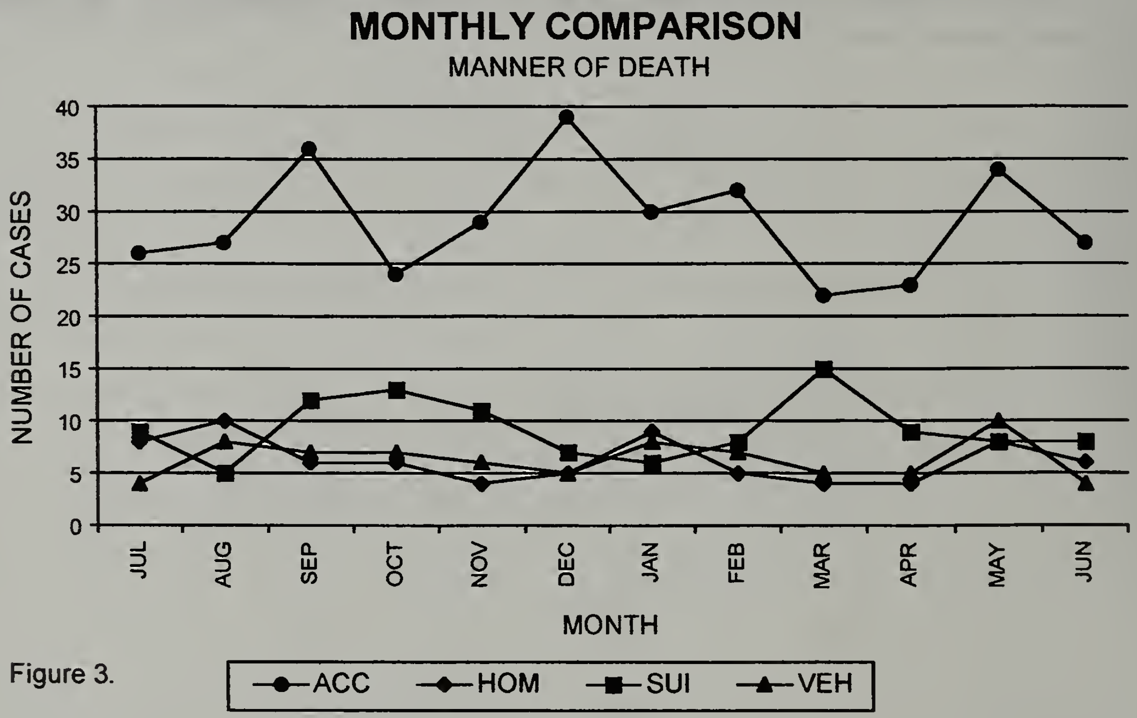


Figure 3.

TABLE II. MANNER OF DEATH BY RACE

Manner of Death

Race	ACC	HOM	SUI	NC	VEH*	SIDS**	UND	TOTALS
White	231 (66%)	34 (45%)	76 (68%)	725 (67%)	48 (63%)	1 (14%)	23 (64%)	1,138 (66%)
Black	81 (23%)	26 (35%)	7 (6%)	199 (18%)	7 (9%)	3 (43%)	7 (19%)	330 (19%)
Asian	34 (10%)	11 (15%)	26 (23%)	137 (13%)	17 (22%)	3 (43%)	4 (11%)	232 (13%)
Other / Unknown	3 (1%)	4 (5%)	2 (2%)	18 (2%)	4 (5%)	0	2 (6%)	33 (2%)
TOTALS	**349**	**75**	**111**	**1,079**	**76**	**7**	**36**	**1,733**

TABLE III. MANNER OF DEATH BY AGE

Manner of Death

Age Group	ACC	HOM	SUI	NC	VEH *	UND	TOTALS
0-11 months	1	0	0	**17	0	0	18
1-5 years	3	0	0	1	1	0	5
6-12 years	3	0	0	0	1	0	4
13-16 years	1	2	2	1	1	0	7
17-19 years	2	6	1	1	5	2	17
20-29 years	38	29	14	9	20	5	115
30-39 years	70	15	22	43	13	7	170
40-49 years	99	12	24	118	8	13	274
50-59 years	35	6	12	180	6	3	242
60-69 years	30	3	15	194	4	2	248
70-79 years	25	0	8	249	5	1	288
80-89 years	30	1	7	204	10	2	254
90 + years	12	1	6	69	2	0	90
Unknown	0	0	0	0	0	1	1
TOTALS	**349**	**75**	**111**	**1,086**	**76**	**36**	**1,733**

* VEH = Vehicular deaths. These include 7 deaths ruled to be homicide and 69 cases ruled to be accidental.

** Includes 7 SIDS (Sudden Infant Death Syndrome) deaths.

TABLE IV. MANNER OF DEATH BY SEX

Sex	ACC	HOM	SUI	NC	VEH*	SIDS**	UND	TOTALS
				Manner of Death				
Male	237	64	75	674	54	5	23	1,132
Female	112	11	36	404	22	2	13	600
Unknown	0	0	0	1	0	0	0	1
TOTALS	**349**	**75**	**111**	**1,079**	**76**	**7**	**36**	**1,733**

* = Vehicular deaths. These include 7 cases ruled to be homicide and 69 ruled to be accidental.

** = Includes 7 SIDS (Sudden Infant Death Syndrome) deaths.

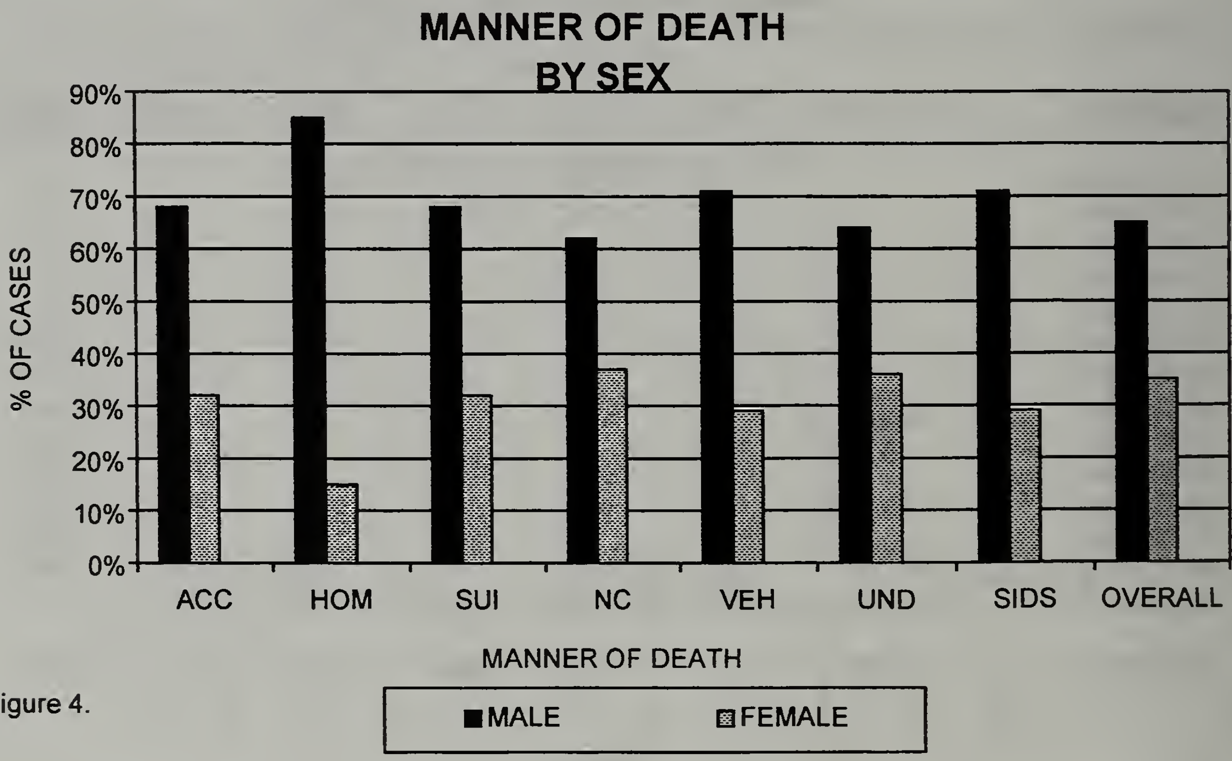


Figure 4.

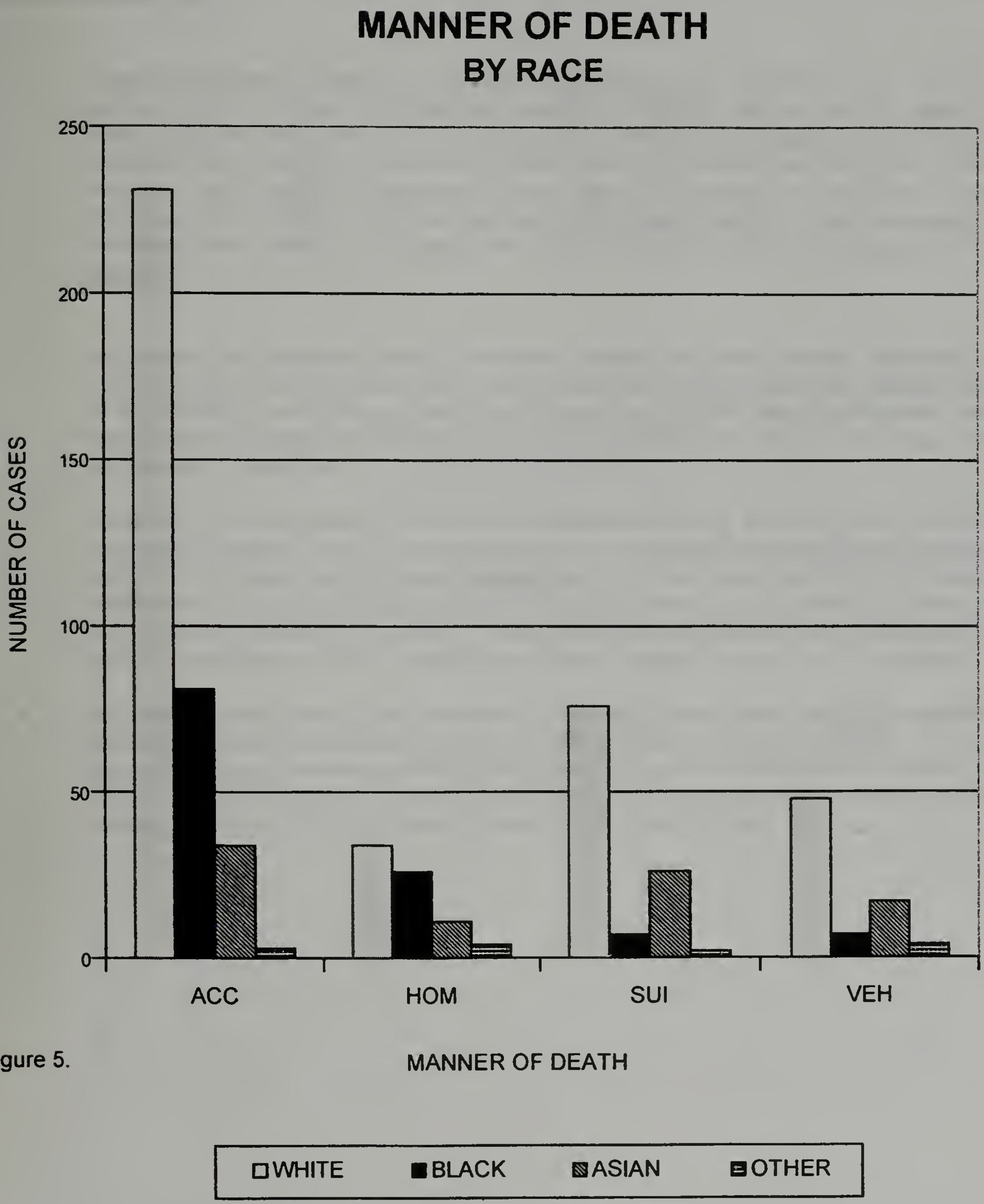

MANNER OF DEATH
BY RACE
NUMBER OF CASES
250
200
150
100
50
0
ACC
HOM
SUI
VEH
MANNER OF DEATH
□WHITE
■BLACK
▨ASIAN
⊟OTHER

Figure 5.

YEARLY COMPARISON OF MEDICAL EXAMINER'S CASES

Comparisons of manners of death as well as methods used over the last ten fiscal years are presented in this section. The most significant differences which have occurred over the last ten years which can be observed in these tabulations include:

1. Regarding **manners of death**, the number of homicides (75) during fiscal year 1997-98 was an increase of 19% from the 63 homicides recorded in 1996-97. The number of accidental deaths increased by 23% from 1996-97. The number of cases ruled to be suicide (111) decreased 20% from fiscal year 1996-97 to the lowest number seen in the last eleven fiscal years. The number of deaths due to natural causes which came under the jurisdiction of this office increased 5% from fiscal year 1996-97. The total number of vehicular deaths (76) was an increase of 36% from fiscal year 1996-97. (See Table V and Figure 6, page 18, Figure 2, page 8, and Figure 10, page 22.)

2. With respect to **methods used in homicide deaths**, the most notable difference from the previous fiscal year is the three fold increase in homicides due to stabbing (from 6 in 1996-97 to 18 in 1997-98). The number of death from firearms in 1997-98, the lowest number seen by this method since 1988-89, accounts for 56% of the homicides. (See Table VI and Figure 7, page 19 and Figure 24, page 55).

3. There was a 20% decrease in the **number of suicides** during the fiscal year 1997-98 (111) as compared to 1996-97 (139). There were decreases in the deaths due to firearms (36% decrease, from 33 to 21 cases), deaths due to drugs/poisons (13% decrease, from 31 to 27 cases), and in deaths due to jumps from buildings (a 54% decrease, from 22 to 10 cases). It should be noted that this is the first year in the last 11 fiscal years that hanging has been the leading means of death in suicide cases. (See. Table VII and Figure 8, page 20, and Figure 24, page 55).

4. Regarding **deaths ruled to be accidental**, those which were caused by drugs showed the most significant change, an increase of 20% from 166 in 1996-97 to 199 in 1997-98. The number of deaths from falls increase markedly (31%) from 54 cases in 1996-97 to 71 cases in 1997-98. Deaths from falls are still second only to deaths from drugs as a leading cause of accidental deaths. (See Table VIII and Figure 9, page 21, and Figure 24, page 55).

YEARLY COMPARISONS OF MEDICAL EXAMINER'S CASES

TABLE V. YEARLY COMPARISON OF MANNER OF DEATH

	Fiscal Year										
Manner of Death	'87-'88	'88-'89	'89-'90	'90-'91	'91-'92	'92-'93	'93-'94	'94-'95	'95-'96	'96-'97	'97-'98
Accident	258	258	298	229	266	286	270	296	319	283	349
Homicide	110	91	94	88	123	127	118	94	98	63	75
Suicide	162	171	128	154	153	132	136	124	156	139	111
Natural	1,074	1,010	903	911	885	930	816	925	1,115	1,034	1,086
Vehicular*	75	71	76	83	79	79	54	80	58	56	76
Undetermined	82	85	76	72	53	58	42	30	40	44	36
TOTALS	**1,761**	**1,686**	**1,575**	**1,537**	**1,557**	**1,612**	**1,451**	**1,549**	**1,789**	**1,619**	**1,733**

MANNER OF DEATH

COMPARISON BY FISCAL YEAR

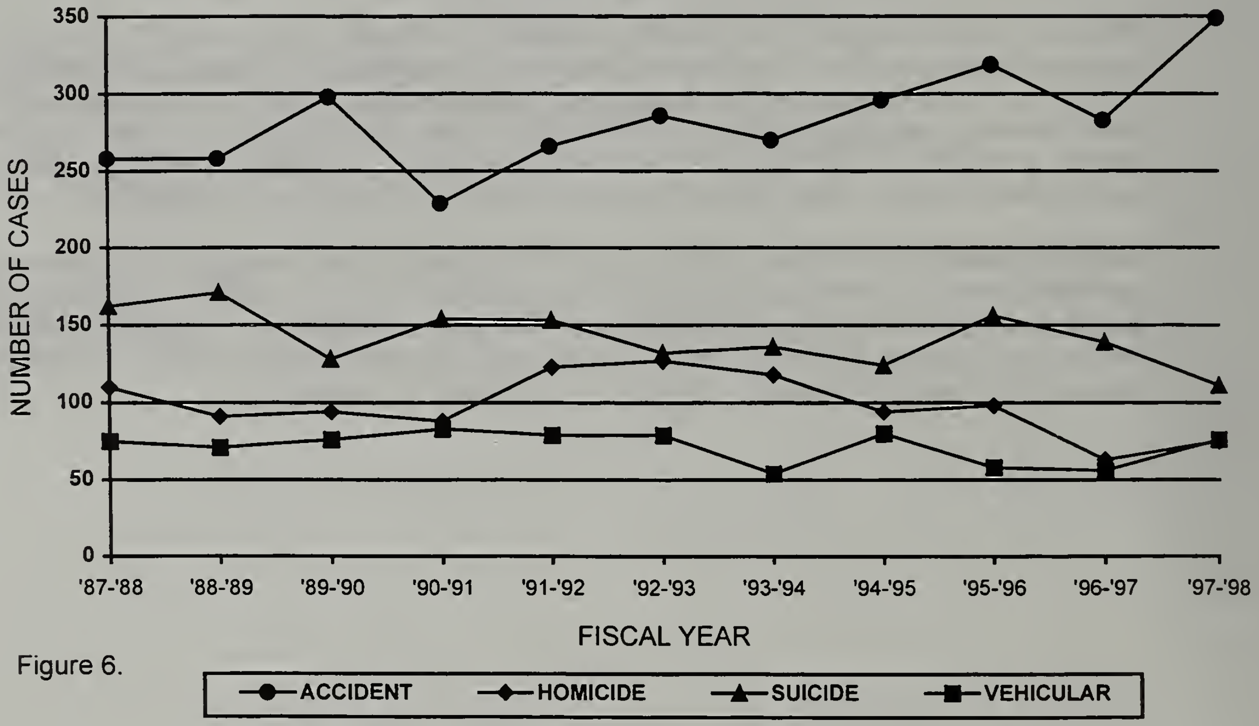


Figure 6.

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* Vehicular deaths. These include 7 cases ruled to be homicide and 69 cases ruled to be accidental.

TABLE VI. YEARLY COMPARISON OF HOMICIDE* METHODS USED

	Fiscal Year										
Method Used	'87-'88	'88-'89	'89-'90	'90-'91	'91-'92	'92-'93	'93-'94	'94-'95	'95-'96	'96-'97	'97-'98
Firearms	48	41	61	50	70	75	83	68	59	47	46
Stabbing	35	21	17	17	20	24	18	14	16	6	18
Traumatic Injury	23	22	10	14	22	16	12	9	18	8	8
Vehicular	13	16	10	16	15	14	11	6	2	11	7
Asphyxia / Strang.	3	5	3	5	7	4	1	3	3	1	3
Other	1	2	3	2	4	8	4	0	2	1	0
TOTALS	**123**	**107**	**104**	**104**	**138**	**141**	**129**	**100**	**100**	**74**	**82**

* Total includes 7 vehicular homicide deaths.

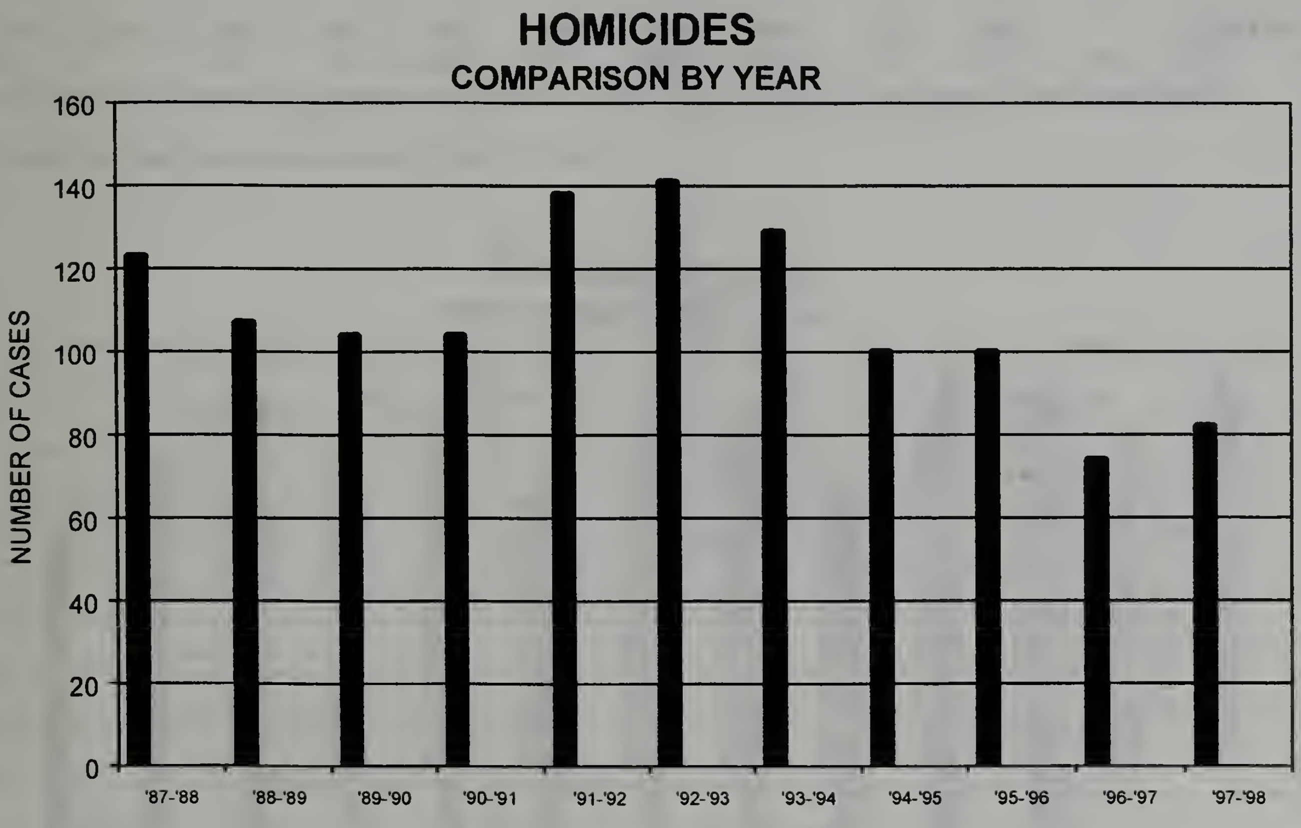


Figure 7.

TABLE VII. YEARLY COMPARISON OF SUICIDE METHODS USED

	Fiscal year										
Method Used	**'87-'88**	**'88-'89**	**'89-'90**	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-**
Burning	0	2	0	2	0	0	1	4	0	1	
CO Poisoning	2	2	9	5	6	5	3	1	3	1	
Cutting/Stabbing	8	5	3	7	2	9	8	5	2	4	
Drowning	3	2	0	1	2	3	1	3	9	5	
Drugs/Poisons	32	44	31	36	44	31	25	37	49	31	2
Firearms	42	44	35	40	37	32	44	24	45	33	2
Hanging	28	17	23	25	23	22	22	19	19	30	3
Jump - Bay Bridge	1	2	2	0	2	1	5	2	1	2	
Jump - Building	19	30	7	13	20	8	12	19	10	22	1
Jump - G.G. Bridge	18	15	10	13	4*	1	3	1	4	1	
Jump - Other	-	-	-	-	2	3	3	0	1	0	
Suffoc./Asphyxia	7	7	6	6	9	14	9	7	13	7	
Vehicular/BART	-	-	-	1	2	2	0	0	2	1	
Other	2	1	2	6	0	2	0	2	0	2	
TOTALS**	**162**	**171**	**128**	**155**	**153**	**133**	**136**	**124**	**158**	**140**	**11**

* Starting midway in fiscal year 1991-92, most Golden Gate Bridge suicides were handled by Marin County.

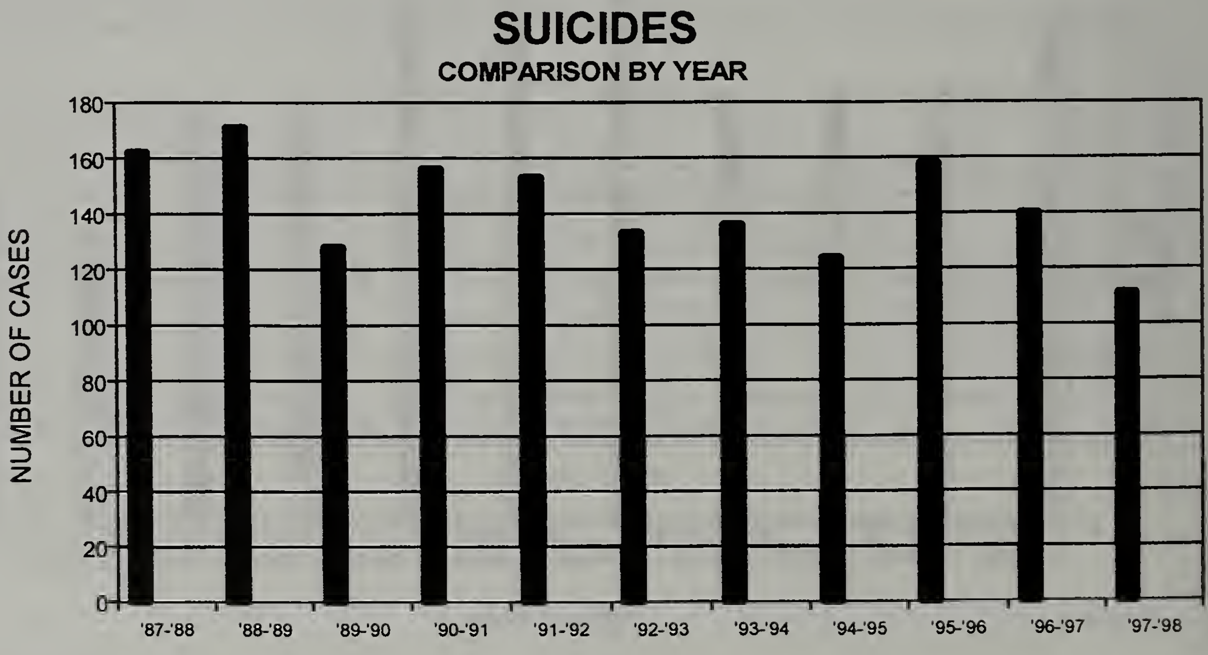


Figure 8.

TABLE VIII. YEARLY COMPARISON OF ACCIDENTAL* DEATH SITUATIONS

	Fiscal year										
Situation	**'87-'88**	**'88-'89**	**'89-'90**	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**
Asphyxia	2	8	8	3	3	5	5	2	11	15	11
Aspiration	10	5	13	10	12	6	12	17	2	2	10
Burns	12	3	15	10	4	4	8	7	5	9	9
Drowning	14	11	10	12	4	5	11	6	5	10	9
Drug Reactions	-	-	-	4	2	0	1	3	0	2	0
Drug/Alc. Abuse Relat.	13	9	3	6	13	18	9	5	5	2	0
Drugs/Poisons	100	144	157	97	123	156	158	169	210	166	199
Falls	76	54	53	55	61	58	48	59	48	54	71
Firearms	1	3	0	2	2	1	2	2	1	0	0
Hanging	2	2	0	2	0	1	1	1	2	0	0
Head Trauma	-	-	11	3	1	6	1	4	3	0	1
Medical Misadventure	13	6	7	12	18	8	5	6	13	13	20
Smoke/CO Inhal.	8	11	4	8	14	6	2	7	8	10	15
Other	7	2	5	5	9	9	7	8	6	0	4
TOTALS	**258**	**258**	**298**	**229**	**266**	**286**	**270**	**296**	**319**	**283**	**349**

* Vehicular deaths are not included in this tabulation.

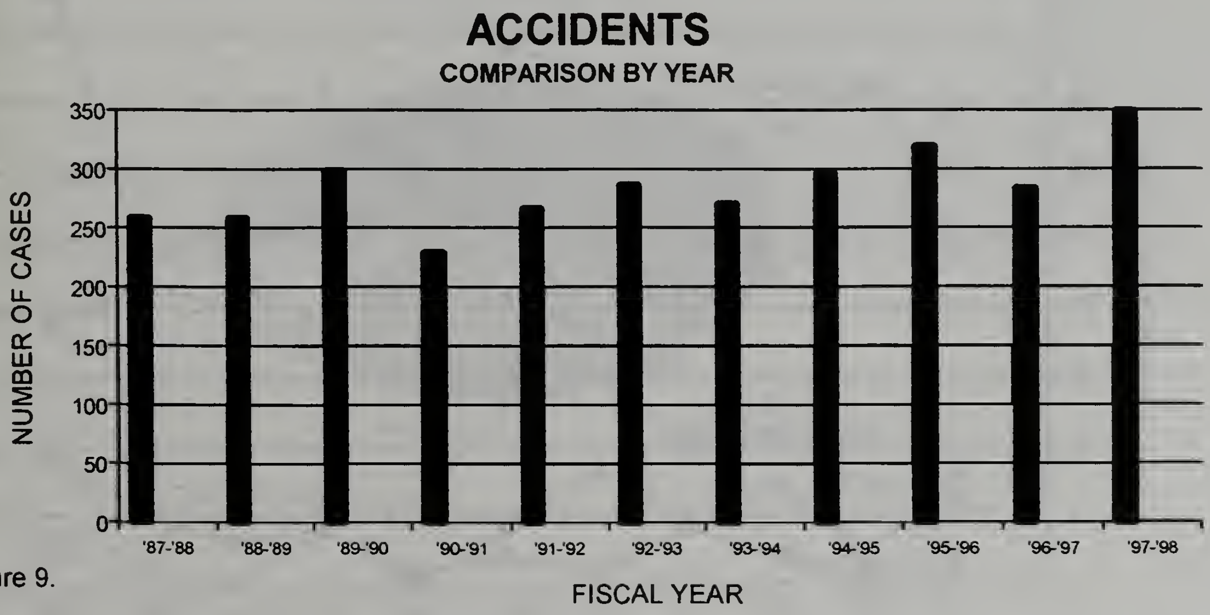


Figure 9.

Table IX. NUMBER OF VEHICULAR FATALITIES BY TYPE

	Fiscal Year										
Situation	**'87-'88**	**'88-'89**	**'89-'90**	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-**
Pedestrian	24	36	33	27	37	39	29	36	27	23	4
Bicycle Driver	2	1	2	4	1	2	1	4	3	5	
Auto Driver	28	14	14	21	10	11	9	19	13	9	
Auto Passenger	7	11	9	16	8	6	8	10	6	11	
Motorcycle Driver	4	7	10	10	11	13	6	6	7	5	
Motorcycle Pass.	2	0	1	0	4	0	0	0	0	0	
Truck Driver	0	0	0	0	0	4	1	1	1	2	
Other/Unknown	8	2	7	5	8	4	0	4	0	1	
TOTALS	**75**	**71**	**76**	**83**	**79**	**79**	**54**	**80**	**57**	**56**	**7**

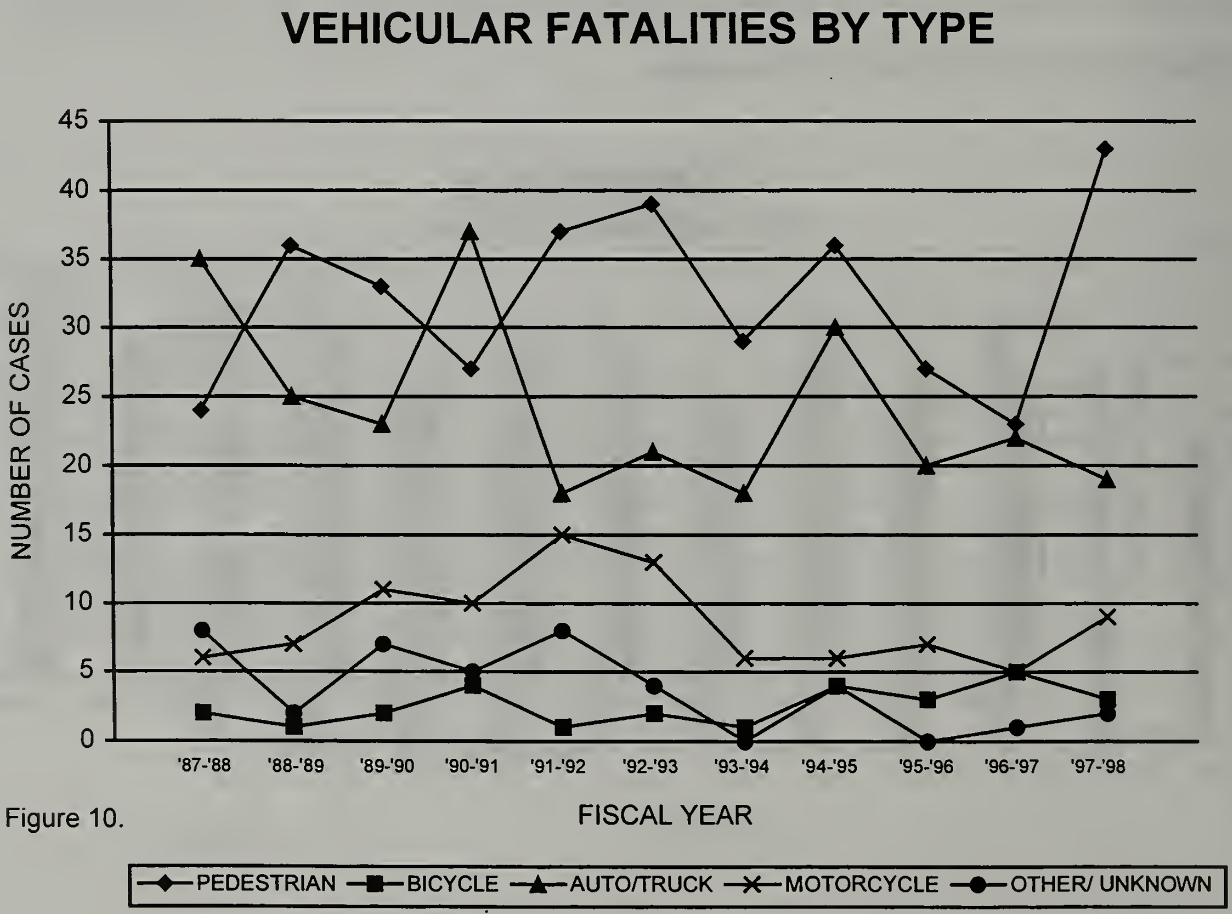


Figure 10.

TABLE IX. VIOLENT DEATHS

Of the 1,733 deaths investigated by the Medical Examiner's Office during 1997-98, 647 were determined to be the result of violence.

Mode	Total Number	% of Medical Examiner Cases	% of County Deaths
ACCIDENT	**418**	**24.1**	**5.9**
Vehicular	69	4.0	
Non-Vehicular	349	20.1	
SUICIDES	**111**	**6.4**	**1.6**
Vehicular	0	0	
Non-Vehicular	111	6.4	
HOMICIDE	**82**	**4.7**	**1.2**
Vehicular	7	0.4	
Non-Vehicular	75	4.3	
MODE UNDETERMINED	**36**	**2.1**	**0.5**
Vehicular	0	0	
Non-Vehicular	36	2.1	

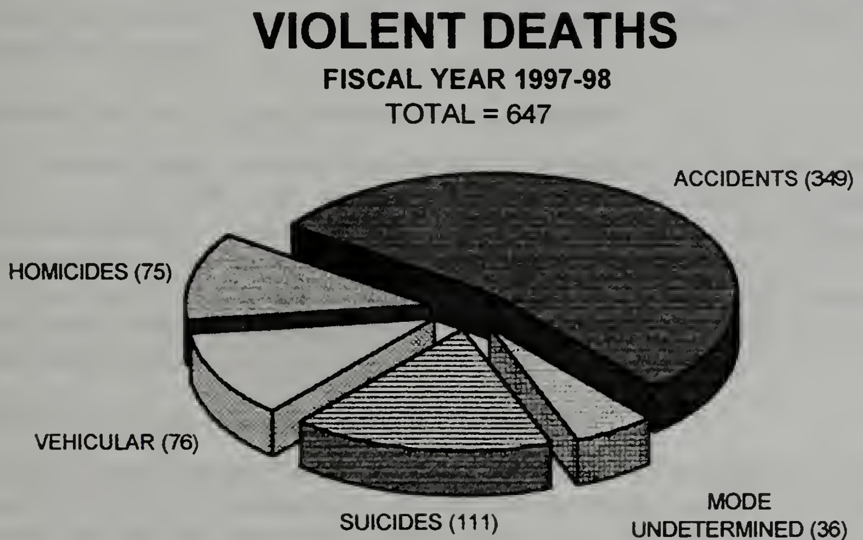


Figure 11.

ACCIDENTAL DEATHS

Four hundred and eighteen deaths were ruled to have been due to accidental means during the 1997-98 fiscal year. Of these, 349 were non-vehicular accidental deaths. The number of individuals dying by each manner of accidental death are indicated in Figure 12, page 26 and Table XI, page 27, and the percentages of all accidental deaths represented by each manner are indicated on Table XI, page 27.

Of the accidental death victims tested for alcohol and drugs (i.e. those in the hospital for less than 24 hours), many had *significant* levels of alcohol in their blood; some had abuse drugs present (See Table XI, page 27).

Abuse Drug Involvement (Table XII, page 28)

Overall, the number of times the four most common abuse drugs were found to be present in accidental death cases was 245, an 8% increase from fiscal year 1996-97 (226). (Note that more than 1 abuse drug may have been present in a single case.) This is in contrast to the dramatic increases seen previously - from 110 cases in fiscal year 1990-91 to 163 cases in fiscal year 1991-92 (a 48% increase!) to 222 cases in fiscal year 1992-93 (a further 36% increase from the preceding fiscal year). Of the deaths *caused by* drugs, heroin (measured as morphine) was seen most frequently (114 cases), an increase of 5% from last fiscal year's 108 cases. The second most frequently seen abuse drug in deaths *due to* drugs was cocaine (94 cases), an increase of 18% from last fiscal year. Amphetamines were present in deaths *due to* drugs in 27 cases, an increase of 29% from last year's count of 21 such deaths. The number of cases with cocaine present increased 14% from the previous fiscal year (87 to 99). The number of cases with heroin present increased by 5% (from 111 to 117 cases). Deaths with amphetamines present remained the same (28 cases). This follows a 33% decrease in cases with amphetamines present between 1994-95 (43 cases) and 1995-96 (29 cases). Abuse drugs may have played a role in accidental deaths due to falls (4 cases) and smoke inhalation (3 cases).

Racial Distribution (Figure 13, page 29 and Table XIII, page 29)

Overall, accidental deaths occurred most frequently in whites. Deaths from asphyxia occurred less frequently in whites (45%) than would be anticipated by the overall involvement of whites in accidental deaths (66%). Asians are much less involved in deaths due to drug/poisons (4%) than would be expected by the involvement of Asians in accidental deaths (10%) and are much more heavily represented in deaths due to falls (21%). Blacks are less heavily represented in deaths by falls (10%) than would be expected based on the general involvement of blacks in all types of accidental deaths (23%).

Age Distribution (Figure 14, page 30 and Table XIV, page 31)

Deaths due to smoke inhalation were the most common cause of accidental deaths in the youngest age groups (0-12 years). There were 3 non-vehicular accidental deaths in the age group from 13-19 years during 1997-98, 2 of which were due to drugs. The most common cause of accidental deaths in people over 60 years of age was falls (68% of all deaths due to falls). Deaths due to drug overdoses are concentrated in the 30-49 year age group with 70% of all deaths due to drug overdoses occurring in this age group.

Distribution by Sex (Table XV, page 32)

Males are 2.1 times as likely as females to be the victims of non-vehicular accidental deaths. This difference is *more* pronounced in deaths due to asphyxia and *less* pronounced in deaths due to drowning.

NON-VEHICULAR ACCIDENTS

This category includes all unintentional fatalities. There were 349 accidental deaths (non-vehicular) which accounted for 20.1% of the Medical Examiner death investigations for the fiscal year of 1997-98.

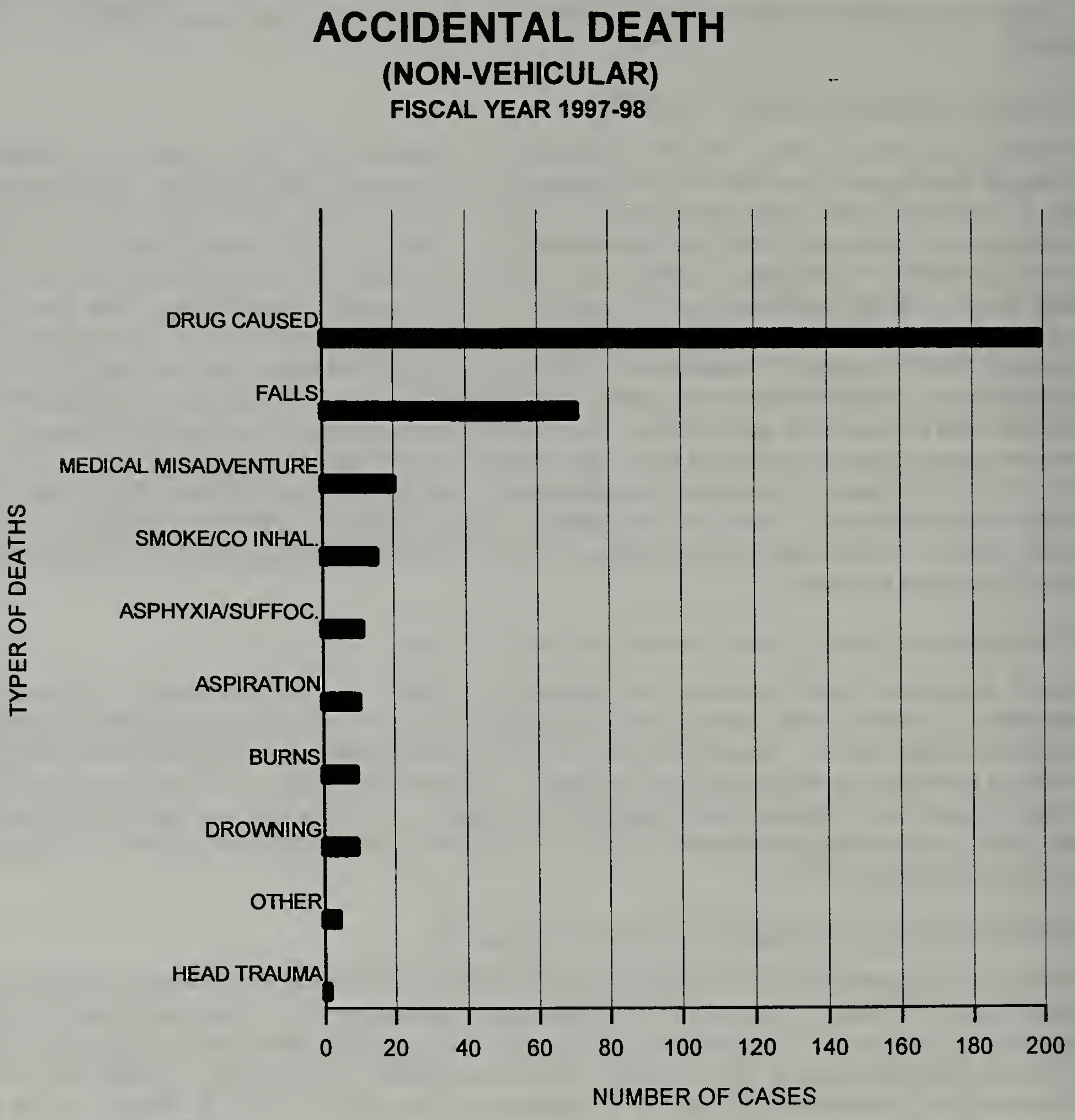


Figure 12.

TABLE XI. ACCIDENTAL DEATHS BY MODE

Drug and Alcohol Involvement

Method	Number	% Of Total Accidents	% With Alcohol *	# Positive (# Tested)	Ave. Alc. Conc. (g%)	% With Drugs **	# Positive (# Tested)
Asphyxia/Suffoc.	11	3.2	38	3 (of 8)	0.21	0	0 (of 3)
Aspiration	10	2.9	0	0 (of 5)	-	0	0 (of 3)
Burns	9	2.6	0	0 (of 4)	-	0	0 (of 3)
Drowning	9	2.6	38	3 (of 8)	0.18	14	1 (of 7)
Drug Caused	199	57.0	43	80 (of 185)	0.17	80	150 (of 188)
Falls	71	20.3	26	10 (of 38)	0.20	12	3 (of 25)
Medical Misadv.	20	5.7	12	1 (of 8)	0.05	0	0 (of 5)
Smoke/CO Inhal.	15	4.3	14	2 (of 14)	0.09	14	2 (of 14)
Head Trauma	1	0.3	0	0 (of 1)	-	100	1 (of 1)
Other	4	1.1	0	0 (of 2)	-	0	0 (of 4)
OVERALL	**349**	**-**	**36**	**99** **(of 273)**	**-**	**62**	**157** **(of 253)**

* Refers to percentage of victims (of those tested) with positive blood ethyl alcohol levels.
** Refers to percentage of victims (of those tested) with positive tests for abuse drugs.

It should be noted that a blood ethyl alcohol concentration of 0.08% is considered to be intoxicated when driving.

TABLE XII. ABUSE DRUGS PRESENT IN NON-VEHICULAR ACCIDENTS

	Drugs			
Situation	**Cocaine**	**PCP**	**Heroin**	**Amphetamines**
Asphyxia/Suffocation	0	0	0	0
Aspiration	0	0	0	0
Burns	0	0	0	0
Drowning	0	0	0	1
Drug Caused	94	1	114	27
Falls	3	0	1	0
Head Trauma	1	0	0	0
Medical Misadventure	0	0	0	0
Smoke / CO Inhalation	1	0	2	0
Other	0	0	0	0
TOTALS	**99**	**1**	**117**	**28**

NOTES: Drugs may have been present singly or in combination.
Drugs used therapeutically are not included in this tabulation.
There may be more than one drug present in a case.
Drugs were not tested for in every case.

Whether drugs are tested for or not depends on the type of case, the length of time the person was hospitalized before death, and the contribution that drug test results will make in determining the cause and manner of death. In many cases, drug testing is *not* performed. Therefore the above figures will provide only a rough idea of the relative incidence of abuse drug usage in accidental deaths. Bearing this in mind, the following evaluation is made.

The number of times the four most common abuse drugs were present in accidental deaths (245) increased 8% from 1996-97 (226). The number of deaths with cocaine present (alone or in combination with other drugs) was 99, 14% higher than in 1996-97 (87). The number of deaths with heroin present (117), measured as morphine, increased 5% from 111 in 1996-97. PCP was present in 1 accidental death. Accidental deaths in which amphetamines were present were the same as in 1996-97 (28).

TABLE XIII. ACCIDENTAL DEATH SITUATIONS BY RACE

	Race				
Method	**White**	**Black**	**Asian**	**Other**	**Total**
Asphyxia / Suffocation	5 (45%)	2 (18%)	4 (36%)	0 (0%)	**11**
Aspiration	8 (80%)	2 (20%)	0 (0%)	0 (0%)	**10**
Burns	7 (78%)	1 (11%)	1 (11%)	0 (0%)	**9**
Drowning	7 (78%)	2 (22%)	0 (0%)	0 (0%)	**9**
Drug / Poison Caused	136 (68%)	56 (28%)	7 (4%)	0 (0%)	**199**
Falls	48 (68%)	7 (10%)	15 (21%)	1 (1%)	**71**
Head Trauma	0 (0%)	0 (0%)	0 (0%)	1 (100%)	**1**
Medical Misadventure	15 (68%)	1 (5%)	3 (15%)	1 (5%)	**20**
Smoke / CO Inhalation	4 (27%)	9 (60%)	2 (13%)	0 (0%)	**15**
Other	1 (25%)	1 (25%)	2 (50%)	0 (0%)	**4**
TOTALS	**231 (66%)**	**81 (23%)**	**34 (10%)**	**3 (0.8%)**	**349**

NOTE: Row percentages refer to percentages by race for each mode. These can be compared to total percentages for each race to see whether a mode is more or less prevalent in a racial group. For instance, deaths from falls appear to occur *more* frequently in Asians (21%) than the general involvement of Asians in accidental deaths (10%). Deaths from falls occur *less* frequently in Blacks (10%) than would be anticipated, based on the overall involvement of Blacks in accidental deaths (23%).

RACE OF NON-VEHICULAR ACCIDENT VICTIMS

FISCAL YEAR 1997-98

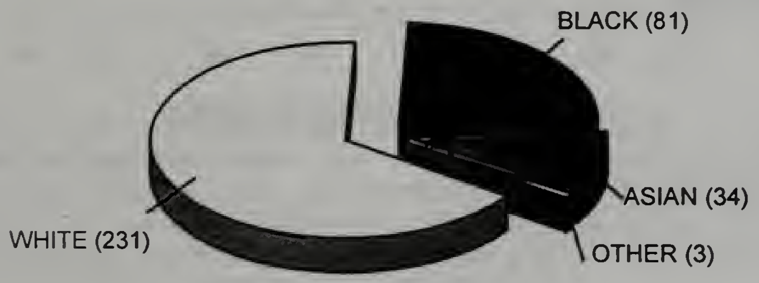


Figure 13.

AGE OF ACCIDENTAL DEATH VICTIMS

FISCAL YEAR 1997-98

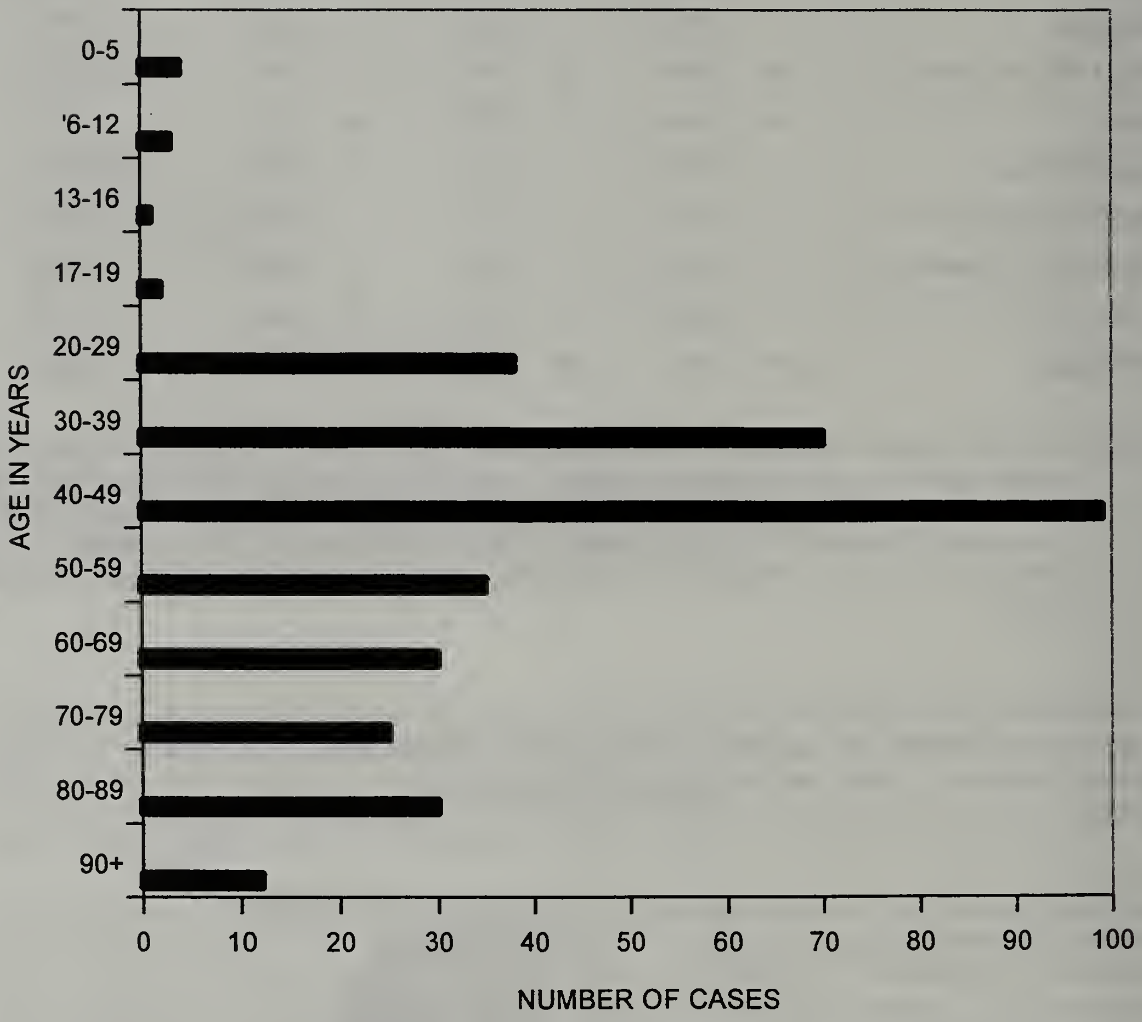


Figure 14.

TABLE XIV. ACCIDENTAL DEATH SITUATIONS BY AGE

Age Range - Years

Method	0-5	6-12	13-16	17-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Ave. Age
Asphyxia	1 (9%)	0	0	0	0	0	1 (9%)	1 (9%)	3 (27%)	2 (18%)	3 (27%)	62.6
Aspiration	0	0	0	0	0	0	1 (10%)	1 (10%)	2 (20%)	2 (20%)	4 (40%)	72.8
Burns	0	0	0	0	0	3 (33%)	1 (11%)	1 (11%)	0	0	4 (44%)	60.2
Drowning	0	0	0	1 (11%)	2 (22%)	0	3 (33%)	1 (11%)	0	2 (22%)	0	44.8
Drug/Poison Caused	0	0	1 (0.5%)	1 (0.5%)	26 (13%)	63 (32%)	75 (38%)	23 (12%)	10 (5%)	0	0	40.3
Falls	0	0	0	0	7 (10%)	3 (4%)	10 (14%)	3 (4%)	9 (13%)	13 (18%)	26 (37%)	65.9
Head Trauma	0	0	0	0	0	0	1 (100%)	0	0	0	0	43.0
Medical Misadvent.	0	0	0	0	2 (10%)	0	2 (10%)	3 (15%)	6 (30%)	4 (20%)	3 (15%)	63.6
Smoke/CO Inhalation	3 (20%)	3 (20%)	0	0	1 (7%)	1 (7%)	4 (27%)	1 (7%)	0	1 (7%)	1 (7%)	32.0
Other	0	0	0	0	0	0	1 (25%)	1 (25%)	0	1 (25%)	1 (25%)	66.8
TOTALS **% Of Total**	**4** **(1%)**	**3** **(0.8%)**	**1** **(0.3%)**	**2** **(0.6%)**	**38** **(11%)**	**70** **(20%)**	**99** **(28%)**	**35** **(10%)**	**30** **(9%)**	**25** **(7%)**	**42** **(12%)**	**49.1**

NOTE: Row percents refer to percentage by age range for each mode. These can be compared to total percentages for each age range to see if a mode is more or less prevalent in an age group. For example, smoke inhalation occurred *more* frequently in the 0-12 year age group (40%) than the general involvement of this age group in accidents (1.8%) while falls in the 30-39 year age group occurred *less* frequently (4%) than all accidents in this age group (20%). Falls in the age group 60-80+ occurred *more* frequently (68%) than all accidents in this age group (28%).

TABLE XV. ACCIDENTAL DEATH SITUATIONS BY SEX

Method	Sex Male	Female
Asphyxia	10 (91%)	1 (9%)
Aspiration	6 (60%)	4 (40%)
Burns	6 (67%)	3 (33%)
Drowning	5 (56%)	4 (44%)
Drug / Poison Caused	148 (77%)	51 (26%)
Falls	42 (59%)	29 (41%)
Head Trauma	1 (100%)	0 (0%)
Medical Misadventure	12 (60%)	8 (40%)
Smoke / CO Inhalation	5 (33%)	10 (67%)
Other	2 (50%)	2 (50%)
TOTALS (% Of Total)	**237 (68%)**	**112 (32%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths from asphyxia appear to occur more frequently in males (91%) that the general involvement of males in accidental deaths (68%) while deaths from smoke/CO inhalation occurred more frequently in females (67%) than all accidental deaths in females (32%).

VEHICULAR DEATHS

In 1997-98, there were 76 vehicular fatalities in San Francisco, an increase of 20 (36%) from 1996-1997. The number of such fatalities by type are indicated in Figure 15, page 34 and Table XV, page 35. Percentages of all vehicular fatalities by type are shown in Table XV, page 35. The largest number of vehicular fatalities involved pedestrians; the second largest number involved automobile passengers and motorcycle drivers. Automobile driver fatalities have decreased from 19 in 1994-95 to 13 in 1995-96 to 9 in 1996-97 to 8 in 1997-98, an overall decrease of 58%. Motorcycle driver fatalities increased by four from 5 in 1996-97 to 9 in 1997-98. Pedestrian fatalities have increased 87% from 23 in 1996-97 to 43 in 1997-98!

Of the vehicular fatalities tested for alcohol (i.e. those in the hospital for less than 24 hours), motorcycle drivers had the highest average blood ethyl alcohol concentration (0.23%). Pedestrians were the vehicular fatalities with the most cases positive for abuse drugs (3 for amphetamines, 1 for heroin)

Abuse Drug Involvement (Table XVII, page 35)

Amphetamines were the abuse drugs seen most frequently in vehicular fatalities (4 times). The number of times abuse drugs were found in vehicular fatalities was 6 in 1997-98, 12 in 1996-97, 3 in 1995-96, 4 in 1994-95, 5 in 1993-94, and 10 in 1991-92.

Age Distribution (Table XVIII, page 36, Table XIX, page 37, and Figure 16, p. 36)

The mean age of pedestrians (55) was the highest seen for any type of traffic fatality with the 60+ year age group being overrepresented in the pedestrian fatalities (44%) as compared to the overall involvement of this age group in all types of traffic fatalities (28%). It should be noted, that the number of pedestrian fatalities in those 50 years and over increased 160%, from 9 in 1996-97 to 23 in 1997-98.

Distribution by Sex (Table XIX, page 37)

Overall, Males were the predominant victims of vehicular fatalities (71%).

Racial Distribution (Table XIX and Figure 17, page 37)

Overall, vehicular fatalities occur most frequently in white non-Hispanics (45%). Asians were represented more heavily among deaths of auto drivers (38%) than would be expected by their involvement in all vehicular fatalities (22%). Blacks were most heavily represented among auto passenger fatalities (44%) during 1997-98.

VEHICULAR DEATHS

In San Francisco, there were 76 vehicle-related fatalities (69 accidents and 7 homicides) accounting for 4% of the Medical Examiner death investigations for the fiscal year 1997-98.

TYPES OF VEHICULAR DEATHS

FISCAL YEAR 1997-98

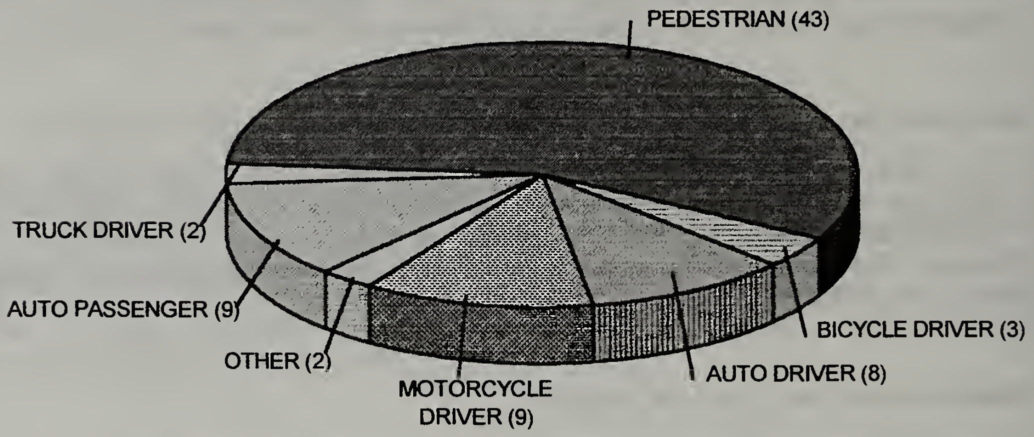


TABLE XVI. VEHICULAR FATALITIES IN 1997-1998

Drug and Alcohol Involvement

Method	Number	% W/ Alc.*	# Positive (# Tested)	Ave. Alc. Conc. (g%)	% With Drugs**	# Positive (# Tested)	% W/ Drugs & Alcohol	# Positive (# Tested)
Pedestrian	43 (57%)	27%	10 (of 37)	0.12	15%	3 (of 20)	0%	0 (of 20)
Auto Driver	8 (11%)	12%	1 (of 8)	0.13	14%	1 (of 7)	0%	0 (of 7)
Auto Passenger	9 (12%)	43%	3 (of 7)	0.16	0%	0 (of 7)	0%	0 (of 7)
Motorcycle Driver	9 (12%)	38%	3 (of 8)	0.23	25%	2 (of 8)	25%	2 (of 8)
Bicycle Driver	3 (4%)	0%	0 (of 3)	-	0%	0 (of 3)	0%	0 (of 3)
Truck Driver	2 (3%)	0%	0 (of 2)	-	0%	0 (of 2)	0%	0 (of 2)
Other	2 (3%)	0%	0 (of 2)	-	0%	0 (of 2)	0%	0 (of 2)
TOTALS	**76**	**25%**	**17** **(of 67)**	**-**	**12%**	**6** **(of 49)**	**4%**	**2** **(of 49)**

* Refers to percentages of victims (of those tested) with positive blood ethyl alcohol levels.
** Refers to percentage of victims (of those tested) with positive blood tests for abuse drugs.

TABLE XVII. ABUSE DRUGS PRESENT IN VEHICULAR FATALITIES

Drugs

Situation	Cocaine	PCP	Heroin	Amphetamines
Pedestrian	0	0	1	3
Auto Driver	0	0	0	1
Auto Passenger	0	0	0	0
Motorcycle Driver	1	0	0	1
Bicycle Driver	0	0	0	0
Truck Driver	0	0	0	0
Other	0	0	0	0
TOTALS	**1**	**0**	**1**	**4**

TABLE XVIII. VEHICULAR FATALITIES BY AGE

Age Range - Years

Situation	0-5	6-12	13-16	17-19	20-29	30-39	40-49	50-59	60-69	70-79	80+
Auto Driver	0	0	1 (12%)	1 (12%)	2 (25%)	3 (38%)	0	0	0	0	1 (12%)
Auto Passenger	1 (11%)	0	0	3 (33%)	2 (22%)	0	1 (11%)	1 (11%)	0	0	1 (11%)
Motorcycle Driver	0	0	0	0	7 (78%)	1 (11%)	1 (11%)	0	0	0	0
Pedestrian	0	1 (2%)	0	1 (2%)	6 (14%)	6 (14%)	6 (14%)	4 (9%)	4 (9%)	5 (12%)	10 (23%)
Bicycle Driver	0	0	0	0	3 (100%)	0	0	0	0	0	0
Truck Driver	0	0	0	0	0	2 (100%)	0	0	0	0	0
Other	0	0	0	0	0	1 (50%)	0	1 (50%)	0	0	0
TOTALS **% Of Totals**	**1** **(1%)**	**1** **(1%)**	**1** **(1%)**	**5** **(7%)**	**20** **(26%)**	**13** **(17%)**	**8** **(11%)**	**6** **(8%)**	**4** **(5%)**	**5** **(7%)**	**12** **(16%)**

NOTE: Row percents refer to percentages by age group for each situation. These can be compared to tota percentages for each age group to see if a situation is more or less prevalent in any age group. Fo example, accidental deaths of motorcycle drivers in the 20-29 year age group occur *more* frequentl (78%) than the general involvement of this age group in vehicular fatalities (26%). Also, accidenta deaths of auto drivers in the 13-19 year age group occurred more frequently (24%) than the genera involvement of this age group in vehicular fatalities (8%). Pedestrian fatalities are more prevalent ir the 60+ age group (44%) than the general involvement of this age group in all vehicular fatalitie (28%).

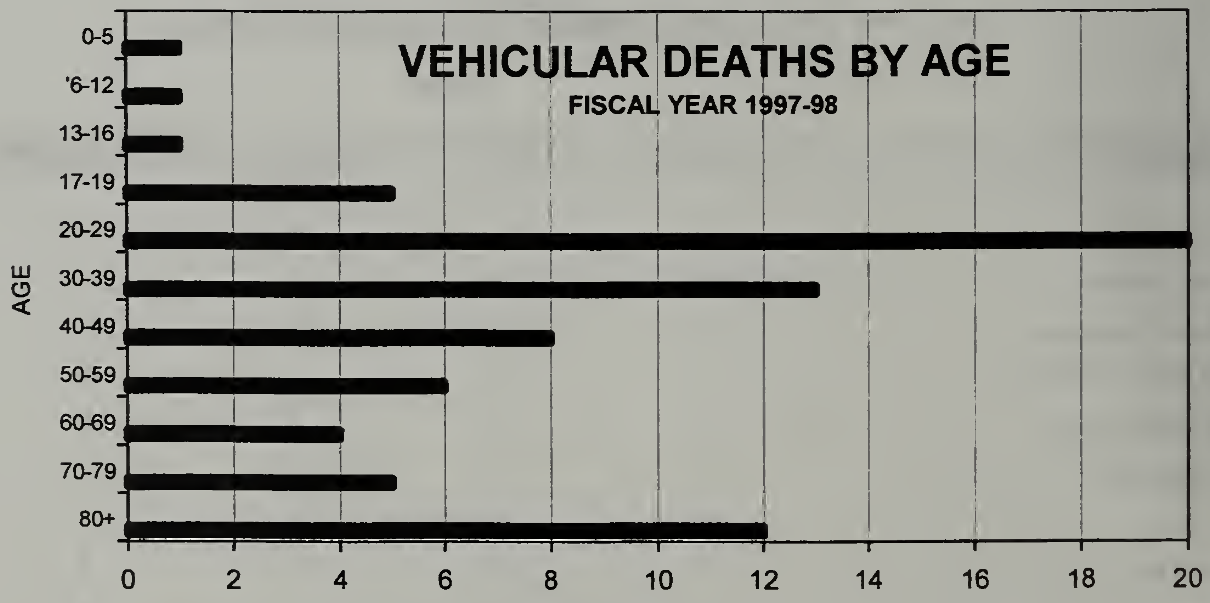


Figure 16.

TABLE XIX. DEMOGRAPHICS OF VEHICULAR FATALITIES

	Sex		Race					Age
Situation	**% M**	**% F**	**% W-NH**	**%W-H**	**%B-NH**	**%A**	**%O**	**Average**
Auto Driver	88	12	38	12	0	38	12	33
Auto Passenger	67	33	11	22	44	22	0	31
Motorcycle Driver	100	0	33	22	0	22	22	30
Pedestrian	63	37	53	12	7	21	7	55
Bicycle Driver	33	67	67	33	0	0	0	24
Truck Driver	100	0	50	0	0	50	0	36
Other	100	0	50	0	0	0	50	48
Average	**71**	**29**	**45**	**14**	**9**	**22**	**9**	**45**

NOTE: Row percentages refer to percentage by demographic characteristics for each situation. These can be compared to total percentage for each characteristic to see whether a situation is more or less prevalent in any one characteristic. For example, accidental deaths of both auto and motorcycle drivers occur *more* frequently in males (88% and 100% respectively) than the general involvement of males in vehicular fatalities (71%). Also, deaths of automobile drivers occur *more* frequently in Asians (38%), than the general involvement of Asians in vehicular fatalities (22%).

RACE OF VEHICULAR DEATH VICTIMS

FISCAL YEAR 1997-98

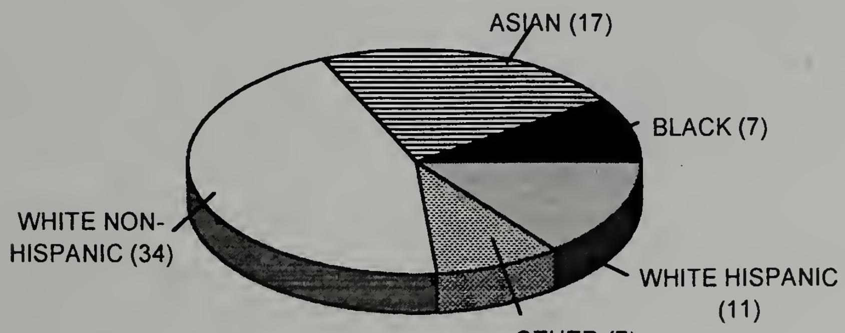


Figure 17.

SUICIDES

The determination of suicide as a manner of death represents the summation of scene investigation, including a review of psychological state, autopsy, pathology, toxicology and, frequently, other investigation. To the best of our knowledge, ours is the only Medical Examiner's Office routinely performing toxicology testing on multiple organs and/or body fluids in order to evaluate the metabolic status of a drug or drugs.

Realizing the immense emotional impact on family, the diagnosis of suicide is never made lightly, and always represents a decision made on the basis of data sufficient to defend that decision in a court of law, if necessary. Should these data be inconclusive, the victim automatically gets the benefit of the doubt.

Suicide takes a tremendous toll of our young people. The relative number jumping from the Golden Gate Bridge would not seem to warrant the publicity assigned them as compared to the evident need for help for individuals using other methods.

To help understand the problem, and hopefully, to aid in reduction of suicides, this office has supported suicide prevention and research programs for many years. It is hoped that this work will help to reduce this needless loss.

The majority of these deaths are situation reactions, and, if given momentary trained support, are potentially preventable.

SUICIDAL DEATHS

One hundred and eleven deaths were ruled to have been due to suicide during the 1997-98 fiscal year and are the basis for the tabulations in this Section. The number of individuals dying by each method of suicide are presented in Figure 18, page 41, and Table XX, page 42, and the percentages of all suicidal deaths by type are indicated in Table IX, page 42, along with alcohol and drug involvement for each mode.

Abuse Drug Involvement (Table XXI, page 42)

Abuse drugs were present 19 times in suicidal deaths in 1997-98 as compared to 10 times in 1996-97. The abuse drugs seen most frequently in suicidal deaths were cocaine (10 times) and amphetamines (5 times). This contrasts with 5 cases of suicide with cocaine present in 1996-97. Amphetamines were found in 2 cases of suicidal death in 1996-97. Abuse drugs were associated more frequently with deaths caused by drug overdose and by hanging than with any other means of suicide.

Racial Distribution (Table XXII and Figure 19, page 43)

Deaths from suicide occurred most frequently in whites (68% of total suicides). The white racial group has been divided into Hispanic and non-Hispanic in this tabulation. It can be seen that the white non-Hispanic group was involved in 68% of all suicides but in 81% of all suicides by drugs or poisons. Suicide by firearms was used *more* frequently by blacks (14%) than would have been expected by the overall percentage of suicides by blacks (6%).

Age Distribution (Table XXIII, page 44, Table XXIV, page 45 and Figure 20, page 45)

There were 2 deaths by suicide in the 13-16 year age group during this fiscal year, the same as for 1996-67. The 40-49 year age group had the highest number of suicides of any age group with deaths from drug overdoses and hanging constituting more than 50% of the total. Of special interest is the fact that the number of suicides in the 20-49 year age group decreased by 29%, from 85 in 1996-97 to 60 in 1997-98. There have not been these few cases in the last eleven fiscal years in this age group.

Distribution by Sex (Table XXV, page 46)

Males were more likely than females to commit suicide in 1997-98 (68% male, 32% female).

SUICIDES

Suicides are self-inflicted deaths. In San Francisco, the 111 suicides which are being tabulated account for 6.4% of the Medical Examiner death investigations for the fiscal year of 1997-98.

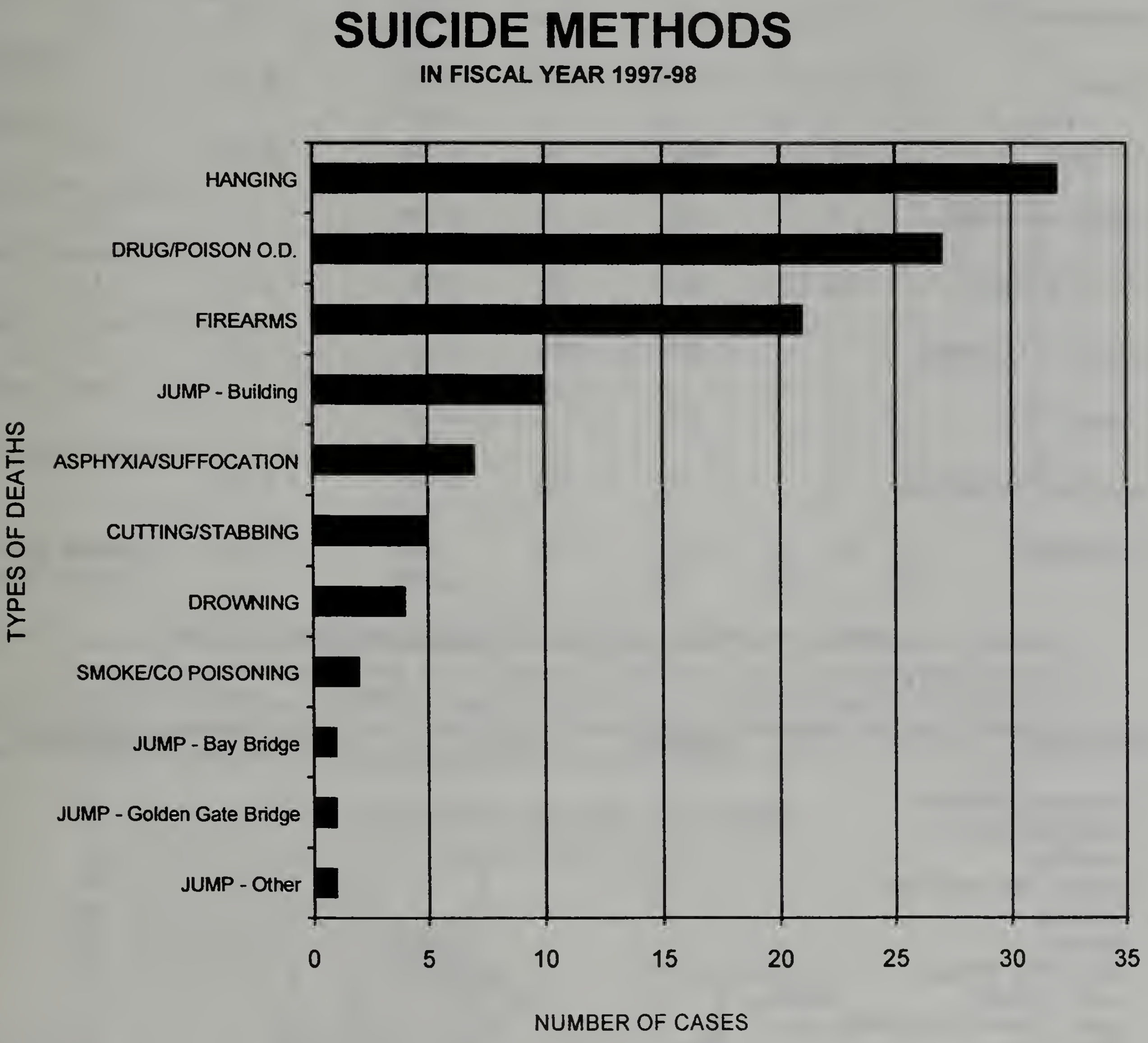


Figure 18.

TABLE XX. SUICIDAL DEATHS BY MODE

			Abuse Drug and Alcohol Involvement				
Method	Number	% Of Total Suicides	% With Alcohol	# Positive (# Tested)	Ave. Alc. Conc. (g%)	% W/ Abuse Drugs	# Positiv (# Teste
Asphyxia/Suffocation	7	6.3	57	4 (of 7)	0.10	0	0 (of 7)
Cutting/Stabbing	5	4.5	20	1 (of 5)	0.03	20	1 (of 5)
Drowning	4	3.6	0	0 (of 3)	-	0	0 (of 2)
Drug/Poison OD	27	24.3	14	3 (of 22)	0.07	22	5 (of 22)
Firearms	21	18.9	21	4 (of 19)	0.11	9	1 (of 11)
Hanging	32	28.8	32	10 (of 31)	0.05	27	7 (of 26)
Jump - Bay Bridge	1	0.9	0	0 (of 1)	-	0	0 (of 1)
Jump - Building	10	9.0	57	4 (of 7)	0.12	17	1 (of 6)
Jump - G. G. Bridge	1	0.9	100	1 (of 1)	0.23	0	0 (of 1)
Jump - Other	1	0.9	0	0 (of 1)	-	-	0 (of 0)
Smoke/CO Poisoning	2	1.8	50	1 (of 2)	0.10	0	0 (of 2)
TOTALS	**111**	**100**	**28**	**28** **(of 99)**	**0.09**	**18**	**15** **(of 83**

TABLE XXI. ABUSE DRUGS PRESENT IN SUICIDAL DEATHS

	Drugs			
Situation	Cocaine	PCP	Heroin	Amphetamines
Asphyxia/Suffocation	0	0	0	0
Cutting/Stabbing	0	0	0	1
Drowning	0	0	0	0
Drug/Poison Overdose	4	0	3	0
Firearms	1	0	0	0
Hanging	4	0	1	3
Jump - Bay Bridge	0	0	0	0
Jump - Building	1	0	0	1
Jump - Golden Gate Bridge	0	0	0	0
Jump - Other	-	-	-	-
Smoke/CO Poisoning	0	0	0	0
TOTALS	**10**	**0**	**4**	**5**

TABLE XXII. SUICIDE METHODS BY RACE

Method	W-NH	W-H	B-NH	ASIAN	OTHER	TOTALS
			Race			
Asphyxia/Suffocation	5 (71%)	0	0	1 (14%)	1 (14%)	**7**
Cutting/Stabbing	4 (80%)	0	0	1 (20%)	0	**5**
Drowning	0	0	0	3 (75%)	1 (25%)	**4**
Drug/Poison Overdose	22 (81%)	0	0	5 (19%)	0	**27**
Firearms	15 (71%)	0	3 (14%)	2 (10%)	1 (5%)	**21**
Hanging	18 (56%)	0	4 (13%)	10 (31%)	0	**32**
Jump - Bay Bridge	1 (100%)	0	0	0	0	**1**
Jump - Building	6 (60%)	0	0	4 (40%)	0	**10**
Jump - Golden Gate Bridge	1 (100%)	0	0	0	0	**1**
Jump - Other	1 (100%)	0	0	0	0	**1**
Smoke/CO Poisoning	2 (100%)	0	0	0	0	**2**
TOTAL NUMBER	**75**	**0**	**7**	**26**	**3**	**111**
% OF TOTALS	**(68%)**		**(6%)**	**(23%)**	**(3%)**	

NOTE: Row percentages refer to percentages by race for each method. These can be compared to total percentages for each race to see whether a method is more or less prevalent in a racial group. For instance, suicides by hanging appear to occur *more* frequently in Asians (31%) than the general involvement of Asians in suicides (23%), and deaths by firearms in blacks (14%) occur *more* frequently than all suicides in blacks (6%).

RACE OF SUICIDE VICTIMS

FISCAL YEAR 1997-98

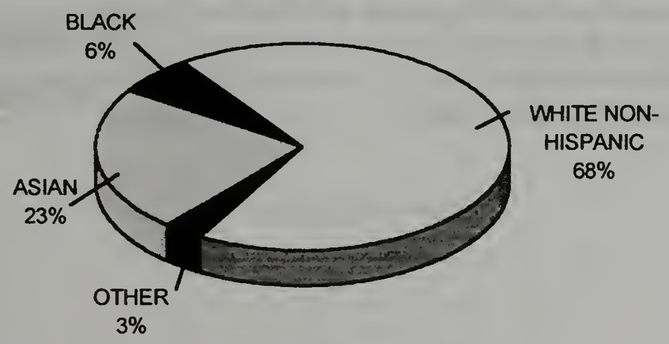


Figure 19.

TABLE XXIII. SUICIDE METHODS BY AGE

Age Range - Years

Method	13-16	17-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90 +
Asphyxia/Suffocation	0	0	0	0	2 (29%)	1 (14%)	0	2 (29%)	2 (29%)	0
Cutting/Stabbing	0	0	0	2 (40%)	0	1 (20%)	1 (20%)	0	1 (20%)	0
Drowning	0	0	1 (25%)	1 (25%)	1 (25%)	0	0	0	0	1 (25%)
Drug/Poison Overdose	0	1 (4%)	3 (11%)	6 (22%)	5 (19%)	3 (11%)	2 (7%)	3 (11%)	3 (11%)	1 (4%)
Firearms	2 (10%)	0	3 (14%)	1 (5%)	2 (10%)	3 (14%)	5 (24%)	2 (10%)	0	3 (14%)
Hanging	0	0	4 (12%)	10 (31%)	9 (28%)	1 (3%)	6 (19%)	0	1 (3%)	1 (3%)
Jump - Bay Bridge	0	0	0	1 (100%)	0	0	0	0	0	0
Jump - Building	0	0	2 (20%)	0	3 (30%)	3 (30%)	1 (10%)	1 (10%)	0	0
Jump - Golden Gate Bridge	0	0	1 (100%)	0	0	0	0	0	0	0
Jump - Other	0	0	0	0	1 (100%)	0	0	0	0	0
Smoke/CO Poisoning	0	0	0	1 (50%)	1 (50%)	0	0	0	0	0
TOTAL NUMBER **% OF TOTAL**	**2** **(2%)**	**1** **(1%)**	**14** **(13%)**	**22** **(20%)**	**24** **(22%)**	**12** **(11%)**	**15** **(14%)**	**8** **(7%)**	**7** **(6%)**	**6** **(5%)**

NOTE: Row percents refer to percentage by age range for each method. These can be compared to total percentages for each age range to see if a method is more or less prevalent in an age group. For example, death by jumps from buildings appears to occur *more* frequently in the 50-59 years of age group (30%) than the general involvement of this age group in suicides (11%) while deaths by firearms in the 30-39 year age group (5%) occur *less* frequently than suicides by all means in this age group (20%).

SUICIDES

TABLE XXIV. AGE RANGES - COMPARISON BY YEAR*

Age Range Years	'87-'88	'88-'89	'89-'90	'90-'91	'91-'92	'92-'93	'93-'94	'94-'95	'95-'96	'96-'97	'97-'98
0 - 19	6	3	1	2	6	2	5	3	5	6	3
20 - 29	36	30	18	20	28	14	30	18	21	22	14
30 - 39	28	33	39	37	34	32	31	29	27	28	22
40 - 49	24	28	30	23	30	36	20	27	39	35	24
50 - 59	23	22	12	29	14	13	23	18	29	11	12
60 - 69	19	19	11	15	12	12	12	11	13	7	15
70 - 79	17	21	6	19	17	14	7	9	14	16	8
80 - 89	5	11	7	8	9	8	7	7	7	9	7
90 - 99	4	3	4	1	3	1	1	2	1	5	6
Unknown	0	1	0	0	0	0	0	0	0	0	0
TOTALS	**162**	**171**	**128**	**154**	**153**	**132**	**136**	**124**	**156**	**139**	**111**

* Totals do not include vehicular deaths ruled to be suicide.

SUICIDE VICTIMS BY AGE

FISCAL YEAR 1997-98

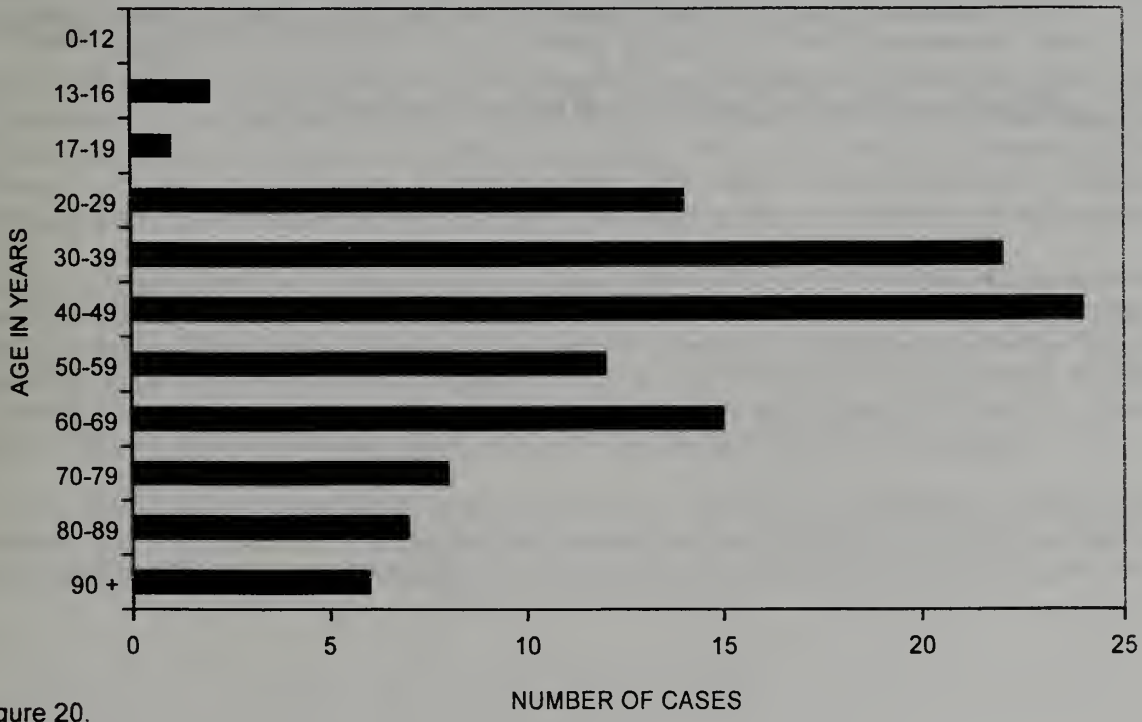


Figure 20.

TABLE XXV. SUICIDE METHODS BY SEX

Method	Sex Male	Female
Asphyxia/Suffocation	4 (57%)	3 (43%)
Cutting/Stabbing	4 (80%)	1 (20%)
Drowning	1 (25%)	3 (75%)
Drug/Poison Overdose	18 (67%)	9 (33%)
Firearms	14 (67%)	7 (33%)
Hanging	25 (78%)	7 (22%)
Jump - Bay Bridge	0 (0%)	1 (100%)
Jump - Building	6 (60%)	4 (40%)
Jump - Golden Gate Bridge	0 (0%)	1 (100%)
Jump - Other	1 (100%)	0 (0%)
Smoke / CO Poisoning	2 (100%)	0 (0%)
TOTALS	**75 (68%)**	**36 (32%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths by hanging appear to occur *more* frequently in males (78%) than the general involvement of males in suicides (68%), while females die by suffocation *more* frequently (43%) than all suicides in females (32%).

HOMICIDE

Homicide is the killing of one human being by another. Murder is the unlawful killing of a human being with malice. The following data do not differentiate homicide as to whether it was justifiable, accidental, or murder. Such distinctions are the proper function of the judicial system and are not the responsibility or function of this office.

Any judicial system which deals with crimes involving death requires a well- trained staff and well-equipped Medical Examiner's Office which can and will interpret forensic findings in an unbiased, fair manner. Their investigation must be intense, accurate and rapid enough so that charges may be pursued or dismissed without unfairly affecting an individual's constitutional rights. That is the purpose of this office.

The proper evaluation and investigation of a homicide begins, naturally, at the scene. In the majority of cases, a staff member of this office (either the Investigator, Medical Examiner's Administrator, or Medical Examiner), determines whether a death is potentially a homicide. It has been well-documented that, if such a determination is made by an individual inexperienced or untrained in death investigation, his opinion will be wrong in 50% of the cases. Such a person is very apt to miss the subtle homicide and is more inclined to miscall a natural or accidental death as homicide, resulting in false arrest, false accusations, needless expenditure of public funds, waste of investigative time and delay in the investigation of other deaths.

The Investigator responds to the scene of death and determines whether the Police Homicide Detail will be called. When homicide is obvious, the Investigator responds as part of a team (other members include homicide investigators, photographers and criminologists). This office is responsible for the body, identification, inquiry into circumstances, manner and means of death (Gov. Code 27491.2). In addition to the scene investigation, the Investigator is responsible for recovering property, locating and notifying next of kin, and preparing a written summary of his/her investigation.

In about one-third to one-half of all homicides, a forensic pathologist will respond to the scene to aid in the investigation. The subsequent autopsy may also use photography, fluoroscopy, X-ray, angiography and other techniques to establish and define the number, nature and severity of wounds, to obtain evidence (i.e. bullets) and to prepare an official report. This report, including chemistry, serology and toxicology results, is used as part of the prosecution or defense of the case in the formal judicial hearing.

Pertaining to criminal trial, our judicial system requires identification of an individual and presentation of evidence, usually by virtue of expert testimony, relative to the cause of death or trauma associated with death. The Medical Examiner's Office identifies the body, frequently relying on local police, CII, or FBI fingerprints. Expert forensic testimony is given by the Forensic Pathologist from this office. In addition, the Forensic Toxicologist is frequently called upon to testify on the significance and effect of various drug levels, a matter of great importance when dealing with the concept of diminished capacity.

Of minor, but increasing importance, is the fact we are seeing more homicide and trauma cases transferred into the County for medical therapy because of San Francisco's excellent and advanced medical facilities. Should these individuals die, the autopsy and court testimony are done by this office.

HOMICIDE DEATHS

Eighty-two deaths were ruled to have been due to homicide during the 1997-98 fiscal year. Of these, 7 were vehicular homicides and have been discussed in the "Vehicular Deaths" section. The remaining 75 homicide deaths are the basis for the tabulations in this section. The numbers of individuals dying by each manner of death are indicated in Figure 21, page 49 and Table XXVI, page 50; percentages of all homicides represented by specific methods are indicated in Table XXVI, page 50. The total number of non-vehicular homicides increased by 19% from 63 in 1996-97 to 75 in 1997-98. The number of homicide deaths by firearms decreased only slightly, from 47 to 46. Of the homicide victims tested for alcohol and drugs (those in the hospital for less than 24 hours), more than one-third had positive blood alcohol levels; more than 40% had drugs present. The percent of homicide victims with positive blood tests for drugs varied with the method of homicide with 50% or more of those dying either by strangulation or blunt trauma having drugs present.

Abuse Drug Involvement (Table XXVII, page 50)

Cocaine was the abuse drug seen most frequently in homicide victims, being present in 27 homicide cases as compared to 17 such cases in 1997-98, an increase of 59%. Cocaine was associated most strongly with deaths by gunshot wound, with 19 of the 27 cases with cocaine present (70%) being deaths due to gunshot wounds. Stabbing was the homicide method which was associated with drugs next most frequently. The number of homicide cases with amphetamines present increased from 2 in 1996-97 to 5 in 1997-98. Overall, the number of times abuse drugs were found to be present in homicide cases increased 61% from 23 in 1996-97 to 37 in 1997-98.

Racial Distribution (Table XXVIII and Figure 22, page 51)

Deaths by homicide occurred more frequently in whites (43%) than in blacks (35%), a reversal from 1996-97, Deaths resulting from firearms accounted for 73% of all homicides in Asians, 69% of homicides in blacks and 49% of homicides in whites.

Age Distribution (Figure 23, page 52, Tables XXIX and XXX, page 53 and Table XXXII, page 54)

There were 8 homicides in the 0-19 year age group, an increase of 60% from 1996-97 but still the second lowest number in the last eleven fiscal years. The number of homicide deaths in the 30-39 year age group decreased 17% from 1996-97 and is the lowest number in this age group in the last eleven fiscal years. Death by firearms accounted for 82% of the homicides in the 0-39 year age group. The peak occurrence of deaths due to firearms was in the 20-29 year age group. As can be seen from Table XXXII, the mean age of homicide victims varies with the mode, with the lowest mean age for males and females being in deaths by firearms.

Distribution by Sex (Table XXXI, page 54)

Males were almost 6 times as likely as females to be homicide victims.

NON-VEHICULAR HOMICIDES

Homicides are those deaths caused by another person, generally resulting in murder and manslaughter charges. In San Francisco, 75 non-vehicular homicides occurred in 1997-98, accounting for 4.3% of the total Medical Examiner investigations.

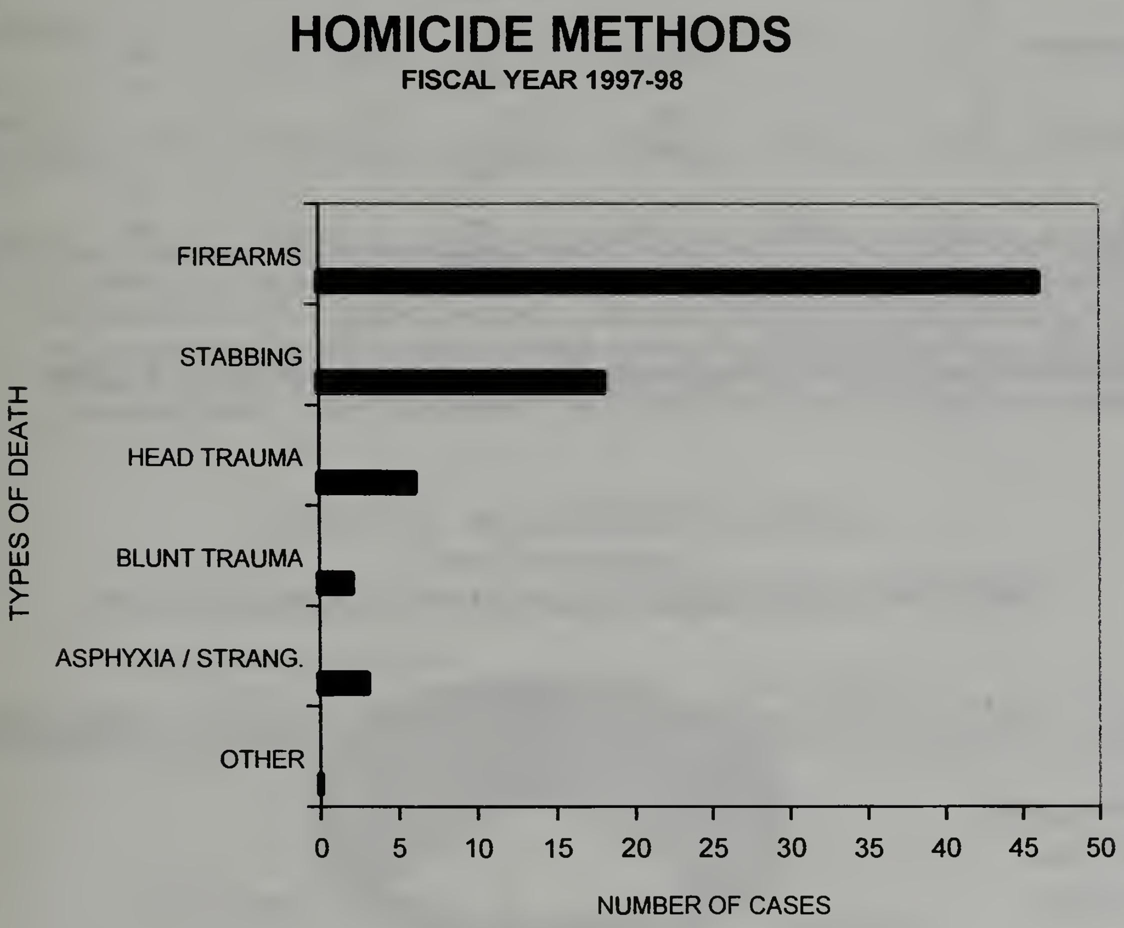


Figure 21.

TABLE XXVI. HOMICIDE DEATHS BY MODE

Abuse Drug and Alcohol Involvement

Method	Number	% Of Total Homicides	% With Alcohol *	# Positive (# Tested)	Ave. Alcohol Conc. (g%)	% With Drugs **	# Positive (# Tested)
Firearms	46	61	41	19 (of 46)	0.14	46	21 (of 46)
Stabbing	18	24	24	4 (of 17)	0.18	41	7 (of 17)
Blunt Trauma	2	3	50	1 (of 2)	0.29	50	1 (of 2)
Asphyxia/Strang.	3	4	67	2 (of 3)	0.02	67	2 (of 3)
Head Trauma	6	8	25	1 (of 4)	0.22	20	1 (of 5)
TOTALS	**75**	**100**	**38**	**27** **(of 72)**	**0.14**	**44**	**32** **(of 73)**

* Refers to percentage of victims (of those tested) with positive blood ethyl alcohol concentrations.

** Refers to percentage of victims (of those tested) with positive blood tests for abuse drugs.

TABLE XXVII. DRUGS PRESENT IN NON-VEHICULAR HOMICIDE DEATHS

Drugs

Situation	Cocaine	PCP	Heroin	Amphetamines
Asphyxia/Strangulation	2	0	0	0
Traumatic Injuries	1	0	0	0
Gunshot Wound	19	0	2	3
Stabbing	5	0	3	1
Head Injury	0	0	0	1
TOTALS	**27**	**0**	**5**	**5**

TABLE XXVIII. HOMICIDE METHODS BY RACE

	Race					
Method	**W-NH**	**W-H**	**B-NH**	**Asian**	**Other**	**TOTAL**
Asphyxia/Strangulation	1 (33%)	0	2 (67%)	0	0	**3**
Head Trauma	2 (33%)	2 (33%)	1 (17%)	1 (17%)	0	**6**
Firearms	5 (11%)	10 (22%)	18 (39%)	8 (17%)	5 (11%)	**46**
Stabbing	9 (50%)	2 (11%)	4 (22%)	2 (11%)	1 (6%)	**18**
Blunt Trauma	1 (50%)	0	1 (50%)	0	0	**2**
TOTALS **% OF TOTAL**	**18** **24%**	**14** **19%**	**26** **35%**	**11** **15%**	**6** **8%**	**75**

NOTE: Row percentages refer to percentages by race for each method. These can be compared to total percentages for each race to see whether a method is more or less prevalent in a racial group. For instance, death by stabbing appears to occur *less* frequently in white Hispanics (11%) than the general involvement of white Hispanics in homicides (19%) while deaths due to firearms appear to occur *less* frequently in white non-Hispanics (11%) than all homicides in white non-Hispanics (24%).

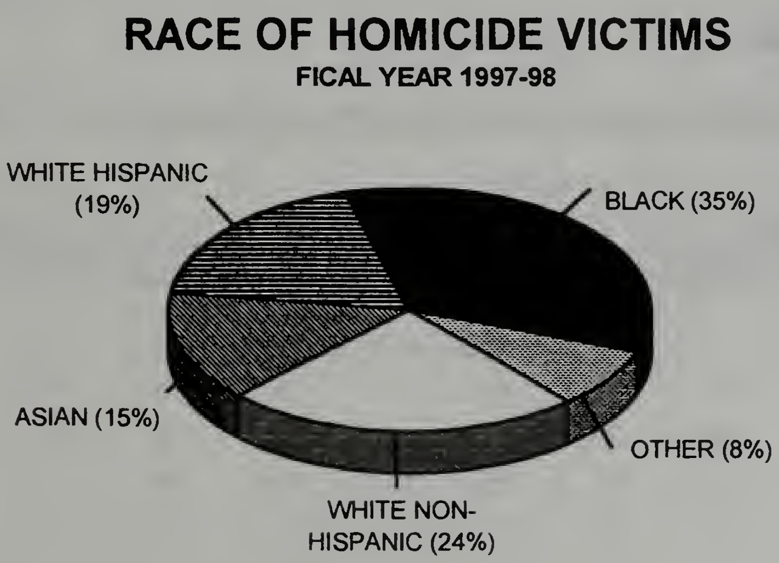


Figure 22.

HOMICIDE VICTIMS BY AGE

FISCAL YEAR 1997-98

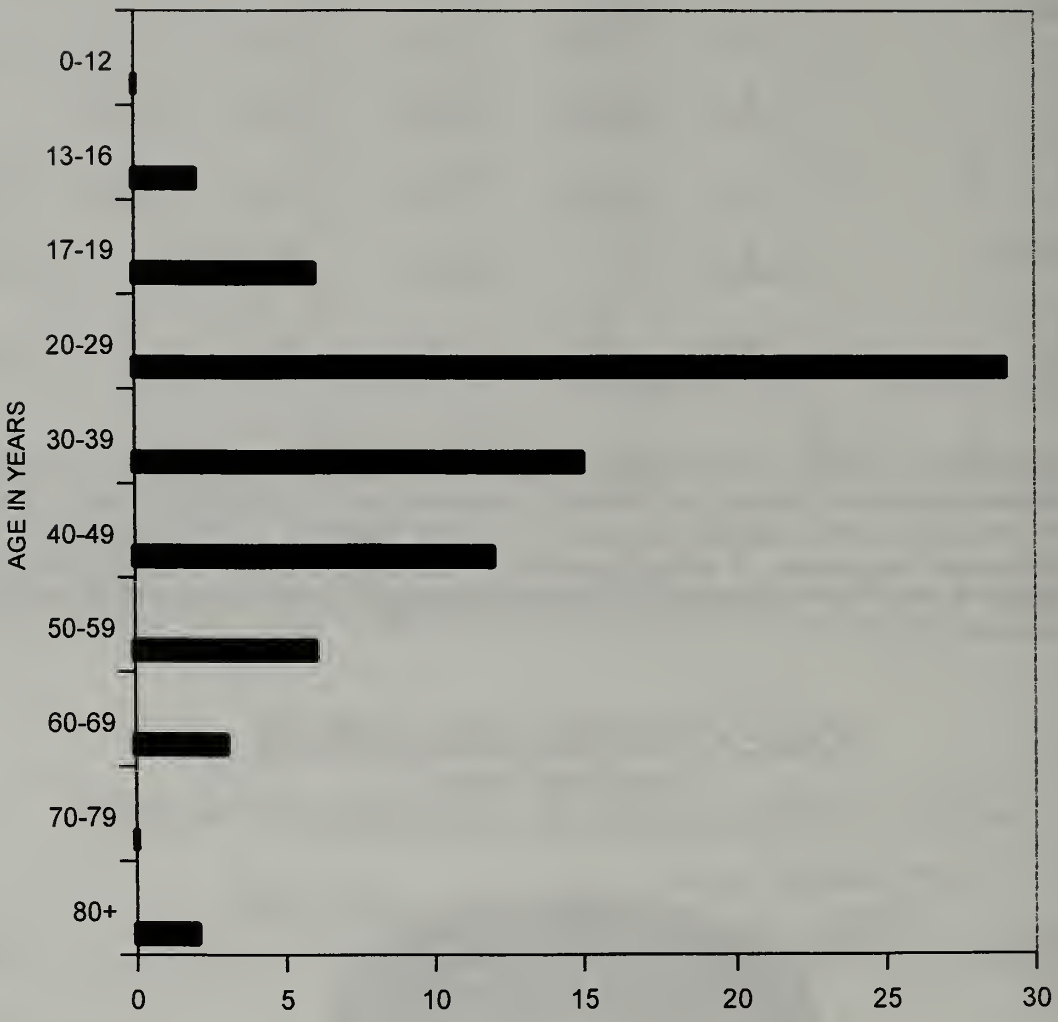


Figure 23.

TABLE XXIX. HOMICIDE METHODS BY AGE

	Age Range - Years										
Method	**0-12**	**13-16**	**17-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80+**	**Unk.**
Asphyxia/ Strangulation	0	0	0	0	2 (67%)	0	1 (33%)	0	0	0	0
Head Trauma	0	0	0	1 (17%)	2 (33%)	1 (17%)	1 (17%)	0	0	1 (17%)	0
Firearms	0	2 (4%)	6 (13%)	24 (52%)	6 (13%)	6 (13%)	1 (2%)	1 (2%)	0	0	0
Blunt Trauma	0	0	0	0	0	1 (50%)	0	0	0	1 (50%)	0
Stabbing	0	0	0	4 (22%)	5 (28%)	4 (22%)	3 (17%)	2 (11%)	0	0	0
TOTALS	**0**	**2**	**6**	**29**	**15**	**12**	**6**	**3**	**0**	**2**	**0**
% OF TOTALS	**(0%)**	**(3%)**	**(8%)**	**(39%)**	**(20%)**	**(16%)**	**(8%)**	**(4%)**	**(0%)**	**(3%)**	

NOTE: Row percents refer to percentage by age range for each method. These can be compared to total percentages for each age range to see if a method is more or less prevalent in an age group. For example, deaths by firearms occur *more* frequently in the 20-29 year age group (52%) than the general involvement of this age group in homicides (39%) while deaths by stabbing occur *less* frequently in the 20-29 year age group (22%) than all homicides in this age group (39%).

It should be noted that 50% of all homicide victims are less than 30 years old and 11% are less than 20 years old.

TABLE XXX. HOMICIDE VICTIMS AGE RANGES COMPARISON BY YEAR

	Fiscal Year										
Age Range Years	**'87-'88**	**'88-'89**	**'89-'90**	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**
0-19	16	18	16	13	19	16	11	18	8	5	8
20-29	28	31	28	37	39	49	53	34	32	22	29
30-39	41	28	28	27	32	25	26	23	32	18	15
40-49	12	15	15	12	17	14	12	12	11	9	12
50-59	13	9	6	5	10	13	8	4	6	5	6
60-69	8	4	5	5	0	3	4	2	4	2	3
70+	5	2	6	5	6	7	4	0	5	2	2

TABLE XXXI. HOMICIDE METHODS BY SEX

Method	Sex Male		Female	
Asphyxia/Strangulation	0	(0%)	3	(100%)
Head Trauma	6	(100%)	0	(0%)
Firearms	43	(93%)	3	(7%)
Blunt Injury	1	(50%)	1	(50%)
Stabbing	14	(78%)	4	(22%)
TOTALS	**64**	**(85%)**	**11**	**(15%)**

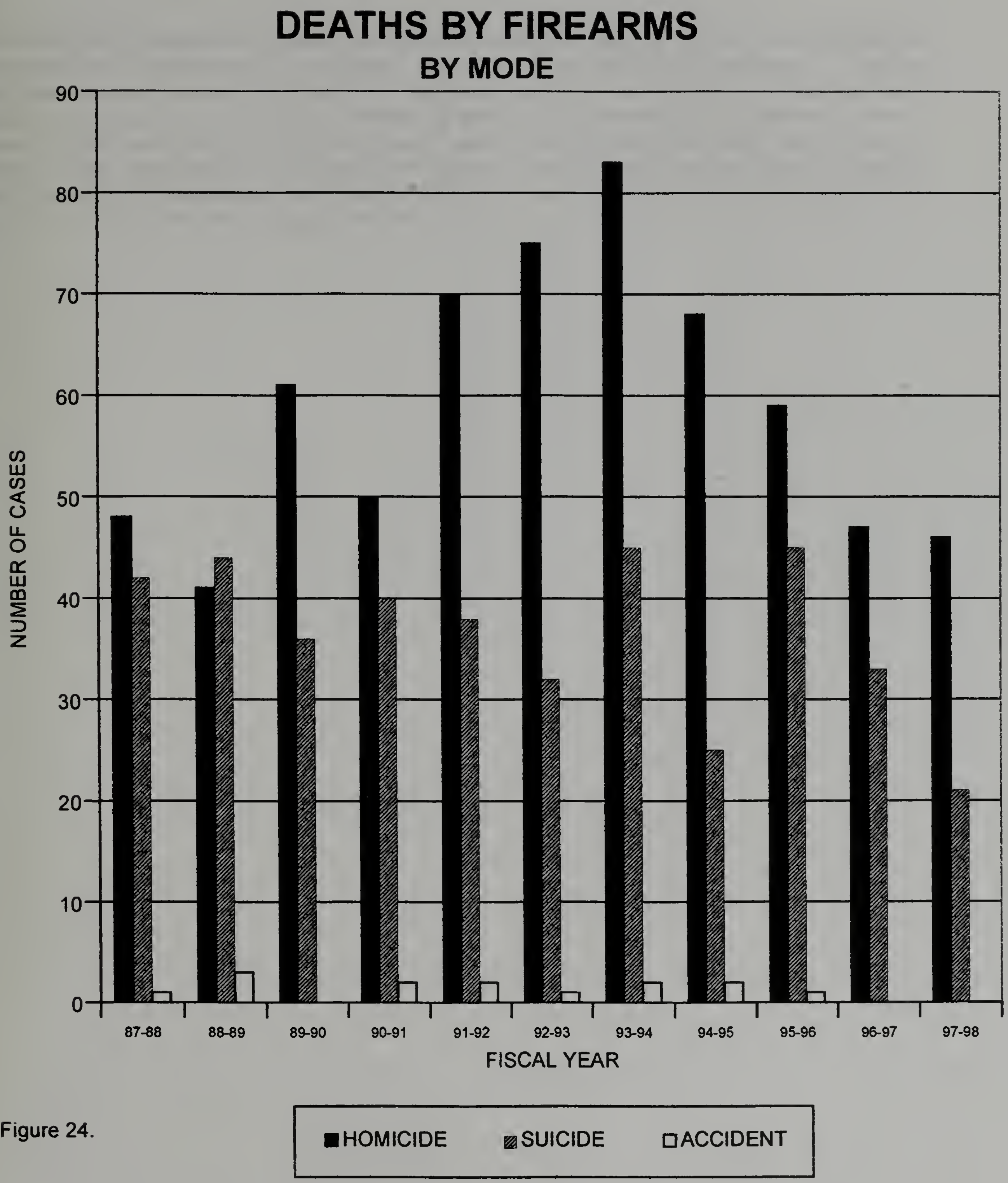
NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths by stabbing occur *more* frequently in females (22%) than the general involvement of females in homicides (15%), while deaths by firearms in males (93%) occur *more* frequently than all homicides in males (85%).

TABLE XXXII. MEAN AGE FOR HOMICIDE VICTIMS BY METHOD AND SEX

(Age in Years)

Method	Male	Female
Asphyxia/Strangulation	-	43
Head Trauma	48	-
Firearms	28	37
Blunt Trauma	47	85
Stabbing	40	48

The lowest mean age for **males** was seen in deaths by firearms.
The lowest mean age for **females** was seen in death by firearms.



DEATHS BY FIREARMS

BY MODE

Figure 24.

PATHOLOGY

In the **Pathology Department**, tissue and body fluid samples taken at autopsy are prepared for microscopic study, histochemically stained, or analyzed for chemical constituents. Cardiac pacemakers or other mechanical life-support devices are examined for any defect. Smears or "wet-mounts" are examined for spermatozoa, bacteria, or tuberculosis. Bacteriologic cultures may be taken. However, if pathogens are grown, they are usually sent to the Department of Public Health (State or local) for further identification. If indicated, "soft" X-rays or histochemical tests are done to establish entrance or exit gunshot wounds. New research techniques, such as methods of obtaining fingerprints from the skin of a victim, are developed here also.

MONTHLY FIGURES

Fiscal Year 1997-1998

PATHOLOGY*

Year	Total Med-Exam Cases	Cases Referred to Pathologist	No. of Organs Submitted	No. of Section Taken	Histo-Pathologic Slides Made	Special Stains **	Blood Typing ***	Other Determinations ****
1997								
July	134	78	549	786	450	76	12	100
Aug.	131	75	496	964	546	27	13	50
Sept.	150	84	327	554	337	23	11	75
Oct.	141	75	466	710	367	28	5	67
Nov.	136	72	161	267	254	19	3	53
Dec.	175	98	468	795	443	30	11	80
1998								
Jan.	175	91	465	761	427	111	14	35
Feb.	155	86	365	656	388	21	9	44
Mar.	142	81	501	918	493	148	4	56
April	111	73	371	597	292	93	10	35
May	150	77	482	878	478	42	8	57
June	133	80	495	890	454	8	10	70
TOTALS	**1,733**	**970**	**5,146**	**8,776**	**5,604**	**626**	**110**	**722**

* These figures do not reflect photography, forensic radiology, or material prepared for teaching forensic patholo

** Includes smears examined for bacteria and spermatozoa

*** ABO and Anti-Rh typing + blood drawings

**** Blood, urine, water, evidence for: hematology, biochemistry, urinalysis, bacteriology, serology, "Sickledix," etc. + blood drawing

***** Total includes blood drawn (38) plus Bacteriology sent out (102) for an addition of 140.

TOXICOLOGY

Toxicology is the study of the interaction of foreign compounds, such as drugs, with living organisms (e.g. people). It involves knowing something of the nature of that interaction, how the foreign compounds break down (that is, how they are metabolized), and what effects they have on the health and behavior of the organism.

All of this information is vital to the role that toxicology plays in determining the cause of death, as well as in evaluating the significance of chemicals found in the living.

Generated within the Toxicology Department is information on samples from Medical Examiner's cases as well as from suspects in criminal cases (e.g. homicides, driving under the influence, probation failure, (H & S 11550), assaults) and other persons to be tested at the request of various law enforcement agencies. The data obtained in these cases enable the toxicologist to assist in interpreting the behavior of the suspects involved, to advise the District Attorney, the Public Defender, the City Attorney, Police Department, the California Highway Patrol, and other agencies, and to give expert testimony in court as necessary in such cases as to the effect of drugs in the case. This application of toxicological facts to legal problems is Forensic Toxicology.

The Toxicology Department also performs analyses on samples submitted by the Police and Fire Departments in connection with the recruitment programs and other personnel requirements. The results in some cases are presented to the respective commission in official hearings.

Toxicological facts are determined through tests performed on biological samples (e.g. blood, urine, gastric contents, liver, etc.) taken at the time of autopsy or from living persons. The samples are subjected to a series of chemical manipulations designed to extract any drugs or other physiologically active compounds that may be present. The subsequent extracts are then examined by equipment set up to detect, accurately identify, and quantitate any materials that may be present. These determinations must be of unquestionable accuracy and as specific as scientifically possible, and they must be able to stand up to review by any other qualified laboratory in the nation.

The analytical methods most commonly used in the toxicological studies are gas and thin layer chromatography; ultraviolet, visible, and fluorescence spectrophotometry; and immunoassay techniques. Advanced techniques, such as mass spectrometry and HPLC (High Performance Liquid Chromatography) are used as necessary for confirmation of difficult samples. These precise and sophisticated methods require the use of advanced laboratory apparatus and highly trained personnel.

Levels of drugs in two or more body compartments (one of which is invariably blood) are routinely determined in order to answer the question of whether the drug use is acute or chronic. This approach is of the utmost importance in determining the time of ingestion and whether or not the intent of the ingestion was suicide.

The range of drugs available to the public is extremely wide, and the nature and type of compounds involved are highly variable. The methodologies necessary to conduct toxicological analyses have to be similarly wide-ranging and also continually expanded in order to keep up with the manufacture of new drugs, both legal and illegal. This is an important aspect of the Toxicology Department's work, often requiring extensive research. So, too, does the identification of "street-manufactured" compounds which are sometimes found in postmortem samples. Also, with many drugs being compounded to have physiologic effects at very low doses, detection in body fluids is often extremely difficult.

The most common drugs in the community are alcohol and prescription items. However, illegal, or "street", drugs (especially morphine-type alkaloids [e.g. heroin], cocaine, and amphetamines) represent a very significant percentage of the compounds actually found in the cases presented to the Toxicology Department. Less commonly used drugs, industrial materials, certain gases, and various other foreign compounds have also been detected.

TOXICOLOGY - MEDICAL EXAMINER'S CASES

July 1997 - June 1998

Incidence of drugs and other physiologically active material detected

The compounds listed are not necessarily the cause of death nor even a contributing factor. They are the toxic agents that were **found to be present**, either singly *or* in combination, in Medical Examiner's cases.

ABUSE DRUGS

Cocaine	152
Benzoylecgonine*	161
Morphine-type alkaloids	175
Codeine	125
Methamphetamine	55
Amphetamine	44
Phencyclidine (PCP)	1
Δ 9 - THC	1

ANALGESIC - NARCOTIC

Methadone	37
Methadone Metabolite	33
Propoxyphene (Darvon)	10
Norpropoxyphene	10
Hydrocodone	15
Meperidine (Demerol)	4
Oxycodone	5
Fentanyl	9

ANALGESICS - NON-NARCOTIC

Acetaminophen	21
Salicylates	1

CARDIAC DRUGS

Lidocaine	62
Metoprolol	2
Propranolol (Inderal)	3
Quinidine	1

ANTI-DEPRESSANTS

Amitriptyline (Elavil)	23
Nortriptyline (Aventyl)	27
Desipramine (Norpramin)	8
Imipramine (Tofranil)	2
Doxepin (Sinequan)	6
Fluoxetine (Prozac)	14
Trazodone (Desyrel)	5

SEDATIVE-HYPONOTICS - Barbiturates

Secobarbital	3
Pentobarbital	2
Phenobarbital	14

ANTIHISTAMINES

Diphenhydramine (Benadryl)	31
Doxylamine	14
Promethazine (Phenergan)	11
Chlorpheniramine	12
Brompheniramine	1

DECONGESTANTS

Phenylpropanolamine	3
Pseudoephedrine	1

BRONCHODILATORS

Ephedrine	21

---

* Benzoylecgonine is not a drug of abuse. It is a metabolite of cocaine and is generally present when cocaine is detected. In some cases, benzoylecgonine, but not cocaine, was found which indicated that there had been some exposure to cocaine.

TOXICOLOGY - MEDICAL EXAMINER'S CASES

July 1997 - June 1998

Drugs Detected, Continued

ANTICONVULSANTS

Diphenylhydantoin (Dilantin)	14
Carbamazepine (Tegretol)	7
Valproic Acid	5

ANTIPSYCHOTIC AGENTS

Chlorpromazine (Thorazine)	1
Thioridazine (Mellaril)	1

MISCELLANEOUS

Carbon Monoxide	21
Acetone	3
Carisoprodol	10
Isopropyl Alcohol	2
Ketamine	1
Verapamil	2
Cyanide	8
Phentermine	1
Chloral Hydrate	1
Caffeine	1
Quinine	6
Olanzepine	3
Clozapine	1
Ibuprofen	1
Amyl Nitrate	1
Mirtazepine	4
GHB	4
Clonidine	2
Haloperidol (Haldol)	1

ANTI-ANXIETY AGENTS

Diazepam (Valium)	42
Nordiazepam	52
Chlordiazepoxide (Librium)	5
Temazepam (Restoril)	2
Alprazolam (Xanax)	4
N-Desalkylflurazepam	6
Hydroxyzine	1
Meprobamate	10
Flurazepam (Dalmane)	4
Lorazepam	4
Clonazepam	2

TOXICOLOGY CASES

July 1997 - June 1998

Year / Month	Medical Examiner	Forensic Toxicology*	Total Cases	Total Tests Performed
1997				
July - September	417	455	872	8,194
October - December	454	619	1,073	8,878
1998				
January - March	464	478	942	7,932
April - June	398	428	826	7,370
TOTALS	**1,733**	**1,980**	**3,713**	**32,374**

* Cases in which specimens were referred to the Medical Examiner's Toxicology Laboratory for forensic toxicological examination generally were criminal cases in which the presence of drugs was suspected either in the victim or suspect of the crime. DUI, 11550, management control, out-of-county and other miscellaneous cases are included in this tabulation.

ABUSE DRUGS

The role of abuse drugs in deaths during the 1997-98 fiscal year is presented in this section. The four abuse drugs most commonly seen in Medical Examiner's cases - cocaine, heroin, amphetamines and PCP - will be examined. The number of cases in which these drugs were found either alone or in combination with other abuse drugs are presented in Table XXXII, page 65. In drug-caused deaths, heroin was the most frequently observed drug of abuse where drugs were present either alone or when drugs were present in combination.

Distribution by Sex (Table XXXIV, page 66)

In deaths caused by abuse drugs (DC = drug caused), where the drugs were present either singly or in combination, 70-100% of the deceased individuals were males, except for amphetamines alone where there was only 1 case, a female.

Distribution by Race (Table XXXIV, page 66)

White-Non-Hispanic (W-NH) - In drug-caused deaths where abuse drugs were present singly, the white non-Hispanic racial group predominated in deaths caused by heroin and amphetamines. In drug-caused deaths where abuse drugs were present in combination with other abuse drugs, the white non-Hispanic racial group predominated in deaths caused by all abuse drugs being studied.

Black/Non-Hispanic (B-NH) - In drug-caused deaths where abuse drugs were present singly, the black non-Hispanic racial group predominated in deaths caused by cocaine.

White-Hispanic (W-H) - This racial group was most heavily represented in drug related deaths where cocaine was present alone and where amphetamines were present in combination with other drugs.

Distribution by Age (Table XXXIV, page 66)

The lowest mean age was seen in drug-related deaths with cocaine present alone (28.4 years) while the highest mean age was seen in drug-caused deaths with cocaine present alone (45.0 years).

Alcohol Involvement (Table XXXIV, page 66)

The presence of alcohol in the blood of abuse drug users (drugs present singly) was most often associated with deaths caused by heroin alone (70%) and was least associated with deaths caused by amphetamines alone (0%).

Deaths Involving Cocaine (Figure 25, page 67 and Tables XXXV and XXXVI, page 68)

Cocaine **alone** was the *cause* of death in 14 cases by overdose, as compared to 5 cases in 1996-97 and 15 cases in 1995-96. Cocaine alone was also present in 25 *drug-related* deaths (See Table XXXV) including 2 ruled to be accidental, and 19 ruled to be by homicide. In 1996-97, cocaine was present in 12 homicides. Of the 25 *drug-related* deaths, 18 (72%), were due to gunshot or stabbing.

Cocaine **in combination** with other drugs was the *cause* of death in 77 cases by overdose, a 15% increase from 1996-97. Cocaine in combination was also present in 14 *drug-related* deaths (See Table XXXVI) including 2 cases ruled to be accidental, 2 cases ruled to be by suicide, and 8 cases ruled to be by homicide. Of these 14 deaths, 7 (50%) were due to gunshot or stabbing.

The number of deaths due to cocaine over the last eleven fiscal years is shown in Figure 25. It can be seen that the number of deaths due to cocaine increased by 19 from 1996-97.

Deaths Involving Heroin (Figure 25, page 67 and Table XXXVII, page 70)

Heroin **alone** was the *cause* of death in 22 cases by overdose, an increase of 2 from the preceding fiscal year. Heroin alone also was present in 1 *drug-related* death. The involvement of heroin alone in *drug-related* deaths was very low as compared to the involvement of cocaine or amphetamines in this type of death, both in number and manners of death.

Heroin **in combination** with other drugs was the *cause* of death in 94 cases by overdose, a 20% increase from the previous fiscal year total of 78 cases. Heroin in combination was present in 6 *drug-related* deaths, 3 (50%) of which were due to gunshot or stabbing.

The numbers of deaths due to heroin over the last twenty-four fiscal years are shown in Figure 27, page 72. The number of such deaths for 1997-98 is the second highest during this period.

Deaths Involving Amphetamines (Figure 25, page 67 and Table XXXVIII, page 71)

Amphetamines **alone** were the *cause* of death in no cases by overdose as compared to 2 each in 1995-96 and 1996-97. Amphetamines *alone* were also present in 9 *drug-related* deaths, 2 of which (22%) were the result of gunshot or stabbing.

Amphetamines **in combination** with other drugs were the *cause* of death in 26 cases by overdose, an increase of 37% from the previous fiscal year. Amphetamines in combination with other drugs were present in 6 *drug-related* deaths, 3 of which (50%) were due to gunshot or stabbing.

Abuse Drugs Present in Violent Deaths (See Figure 26, page 69)

Cocaine is the drug of abuse seen most frequently in deaths by homicide and suicide.

SAN FRANCISCO MEDICAL EXAMINER'S CASES

TABLE XXXIII. ABUSE DRUGS

Abuse Drugs Present Alone

Drug	Drug Caused Deaths*	Drug Related Deaths	Role Unclear	Incidental Findings
Cocaine alone	19	24	5	4
Heroin alone	30	1	0	0
Amphetamines alone	1	9	4	2
PCP alone	0	0	0	0

Abuse Drugs Present in Combination with Other Drugs

Drug	Drug Caused Deaths*	Drug Related Deaths	Role Unclear	Incidental Findings
Cocaine in combination	82	14	11	2
Heroin in combination	100	6	10	2
Amphetamines in combination	26	6	2	4
PCP in combination	1	0	0	0

*NOTE: Drug *caused* deaths are not all due to drug overdoses.

TABLE XXXIV. ABUSE DRUGS - INCIDENCE BY SEX, RACE, AGE, AND ALCOHOL INVOLVEMENT

Drugs Present Singly

Drug	SEX		RACE			Mean Age	% With Alcohol	# Positive (# Tested)	Ave. Alc. Conc. (g%)
	% M	% F	% W-NH	% W-H	%B-NH				
Cocaine - DC*	74	26	3	0	68	45.0	47	8 (of 18)	0.05
Cocaine - DR**	84	16	2	16	44	28.4	60	15 (of 25)	0.10
Heroin - DC*	73	27	6	13	20	38.8	70	16 (of 23)	0.15
Heroin - DR**	100	0	10	0	0	43.0	0	0 (of 1)	-
Amphet. - DC*	0	100	10	0	0	42.0	0	0 (of 1)	-
Amphet. -DR**	100	0	6	0	22	37.2	38	3 (of 8)	0.14
PCP - DC*	NONE								
PCP - DR**	NONE								

Drugs Present in Combination

Drug	SEX		RACE			Mean Age	% With Alcohol	# Positive (# Tested)	Ave. Alc. Conc. (g%)
	% M	% F	% W-NH	% W-H	%B-NH				
Cocaine - DC*	70	30	50	7	33	38.8	38	31 (of 81)	0.14
Cocaine - DR**	79	21	21	7	64	35.9	57	8 (of 14)	0.08
Heroin - DC*	78	22	60	6	27	39.1	41	40 (of 98)	0.13
Heroin - DR**	100	0	50	0	50	40.0	17	1 (of 6)	0.18
Amphet. - DC*	85	15	77	4	12	34.7	42	11 (of 26)	0.11
Amphet. -DR**	83	17	67	17	17	32.3	50	3 (of 6)	0.14
PCP+ - DC*	100	0	100	0	0	35.0	0		-
PCP+ - DR**	NONE								

* DC = Drug Caused
** DR = Drug Related

DEATHS DUE TO AMPHETAMINES, COCAINE AND HEROIN
BY FISCAL YEAR

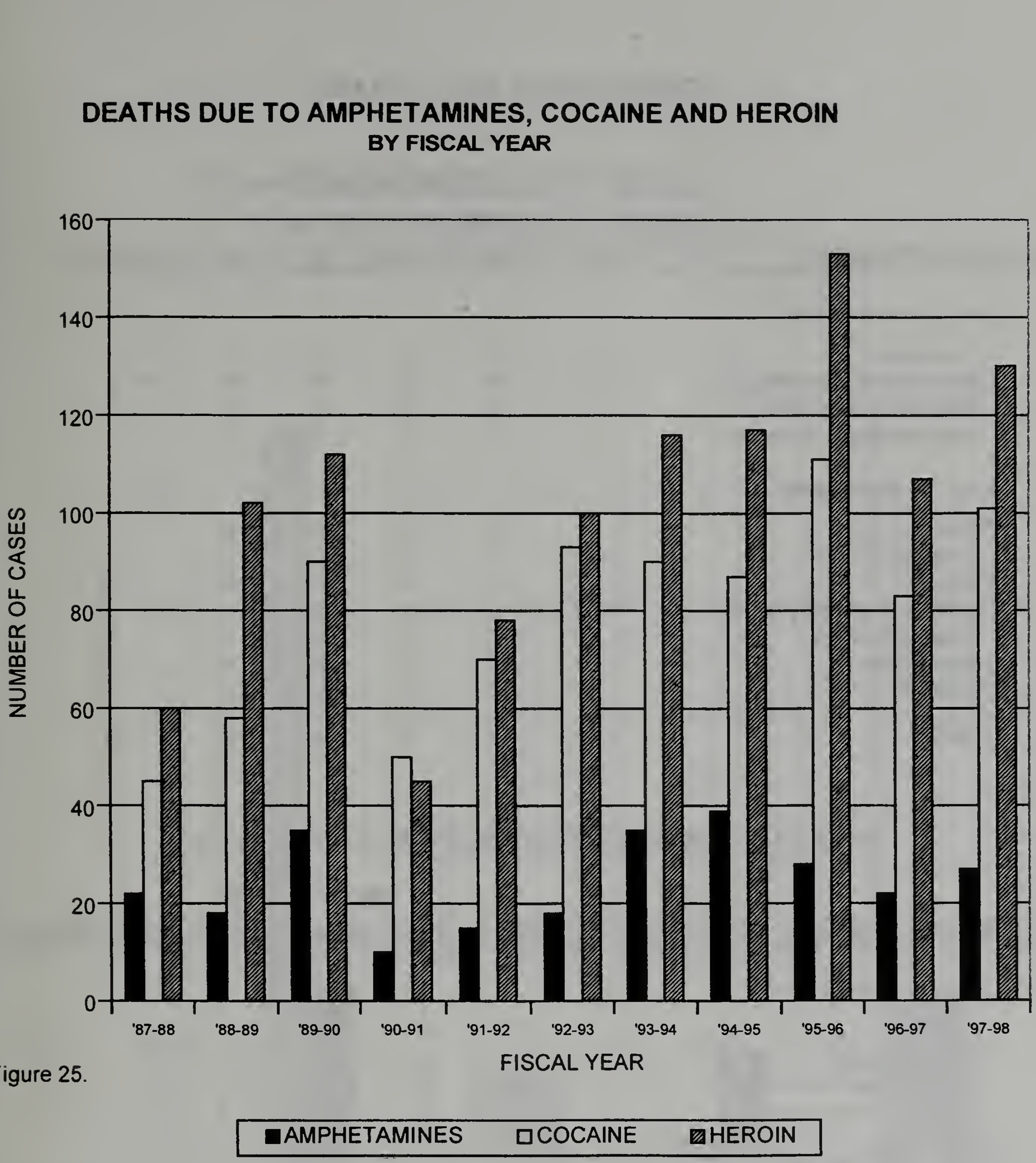


Figure 25.

DEATHS INVOLVING COCAINE

TABLE XXXV. COCAINE PRESENT ALONE

	Manner of Death					
CAUSE OF DEATH	ACC	SUI	HOM	NC	UND	TOTALS
Drug Caused Deaths						
Overdose	14	0	0	0	0	**14**
Intracerebral Hemorrhage	3	0	0	0	0	**3**
Myocardial Infarction	1	0	0	0	0	**1**
Ruptured Aortic Aneurysm	1	0	0	0	0	**1**
Drug Related Deaths						
Fall	1	0	0	0	0	**1**
Gunshot Wound	0	1	14	0	0	**15**
Hanging	0	3	0	0	0	**3**
Multiple Traumatic Injuries	0	0	1	0	0	**1**
Stabbing/Cutting	0	0	3	0	0	**3**
Strangulation	0	0	1	0	0	**1**
Vehicular	1	0	0	0	0	**1**
TOTALS	**21**	**4**	**19**	**0**	**0**	**44**

TABLE XXXV. COCAINE IN COMBINATION WITH OTHER DRUGS

	Manner of Death					
CAUSE OF DEATH	ACC	SUI	HOM	NC	UND	TOTALS
Drug Caused Deaths						
Overdose	71	4	0	0	2	**77**
Cor Pulmonale	1	0	0	0	0	**1**
Intracerebral Hemorrhage	3	0	0	0	0	**3**
Ruptured Aortic Aneurysm	1	0	0	0	0	**1**
Drug Related Deaths						
Fall	1	0	0	0	0	**1**
Fall/Jump - Building	1	1	0	0	0	**2**
Gunshot Wound	0	0	5	0	0	**5**
Intracerebral Hemorrhage	0	0	0	2	0	**2**
Hanging	0	1	0	0	0	**1**
Stabbing	0	0	2	0	0	**2**
Strangulation	0	0	1	0	0	**1**
TOTALS	**78**	**6**	**8**	**2**	**2**	**96**

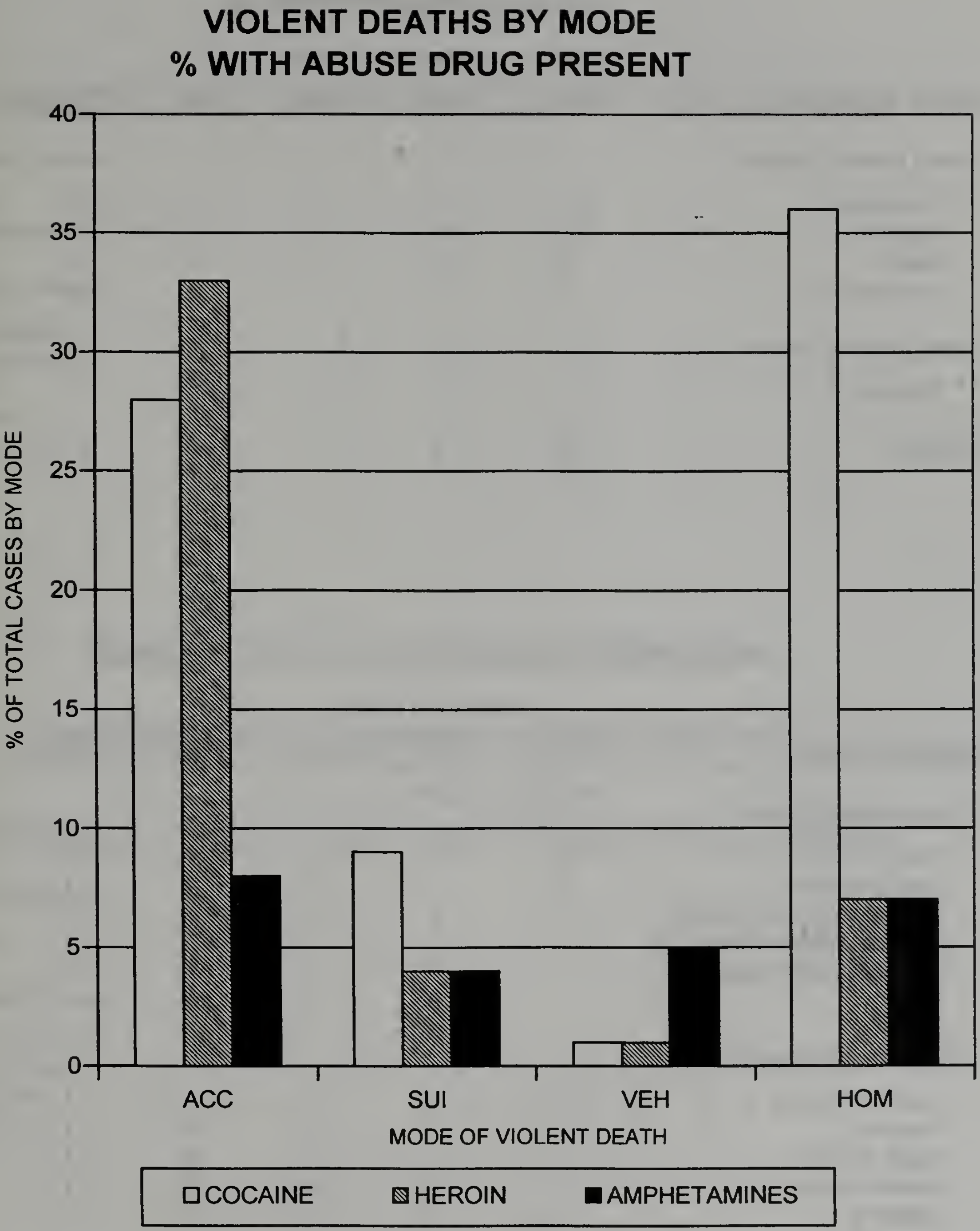

VIOLENT DEATHS BY MODE
% WITH ABUSE DRUG PRESENT
% OF TOTAL CASES BY MODE
0
5
10
15
20
25
30
35
40
ACC
SUI
VEH
HOM
MODE OF VIOLENT DEATH
☐ COCAINE
▨ HEROIN
■ AMPHETAMINES

Figure 26.

TABLE XXXVII. DEATHS INVOLVING HEROIN

HEROIN PRESENT ALONE

	Manner of Death				
CAUSE OF DEATH	ACC	SUI	HOM	UND	TOTAL
Drug Caused Deaths					
Overdose	22	0	0	0	**22**
Fasciitis	1	0	0	0	**1**
Sepsis	5	0	0	0	**5**
Endocarditis	2	0	0	0	**2**
Drug Related Deaths					
Stabbing	0	0	1	0	**1**
TOTALS	**30**	**0**	**1**	**0**	**31**

HEROIN PRESENT IN COMBINATION WITH OTHER DRUGS

	Manner of Death				
CAUSE OF DEATH	ACC	SUI	HOM	UND	TOTAL
Drug Caused Deaths					
Overdose	90	3	0	1	**94**
Cor Pulmonale	1	0	0	0	**1**
Intracerebral Hemorrhage	2	0	0	0	**2**
Nervous System/Fungal Inf.	1	0	0	0	**1**
Ruptured Aortic Aneurysm	1	0	0	0	**1**
Sepsis	1	0	0	0	**1**
Drug Related Deaths					
Gunshot Wound	0	0	1	0	**1**
Hanging	0	1	0	0	**1**
Head Trauma	1	0	0	0	**1**
Motor Vehicle	1	0	0	0	**1**
Stabbing	0	0	2	0	**2**
TOTALS	**98**	**4**	**3**	**1**	**106**

TABLE XXXVIII. DEATHS INVOLVING AMPHETAMINES

AMPHETAMINES PRESENT ALONE

CAUSE OF DEATH	Manner of Death ACC	SUI	HOM	UND	TOTAL
Drug Caused Deaths					
Overdose	0	0	0	0	**0**
Intracerebral Hemorrhage	1	0	0	0	**1**
Drug Related Deaths					
Cutting/Stabbing	0	1	0	0	**1**
Gunshot Wound	0	0	1	0	**1**
Hanging	0	3	0	0	**3**
Head Injury	0	0	1	0	**1**
Motor Vehicle	3	0	0	0	**3**
TOTALS	**4**	**4**	**2**	**0**	**10**

AMPHETAMINES PRESENT IN COMBINATION WITH OTHER DRUGS

CAUSE OF DEATH	Manner of Death ACC	SUI	HOM	UND	TOTAL
Drug Caused Deaths					
Overdose	25	0	0	1	**26**
Drug Related Deaths					
Gunshot Wound	0	0	2	0	**2**
Jump - Building	0	1	0	0	**1**
Motor Vehicle	2	0	0	0	**2**
Stabbing	0	0	1	0	**1**
TOTALS	**27**	**1**	**3**	**1**	**32**

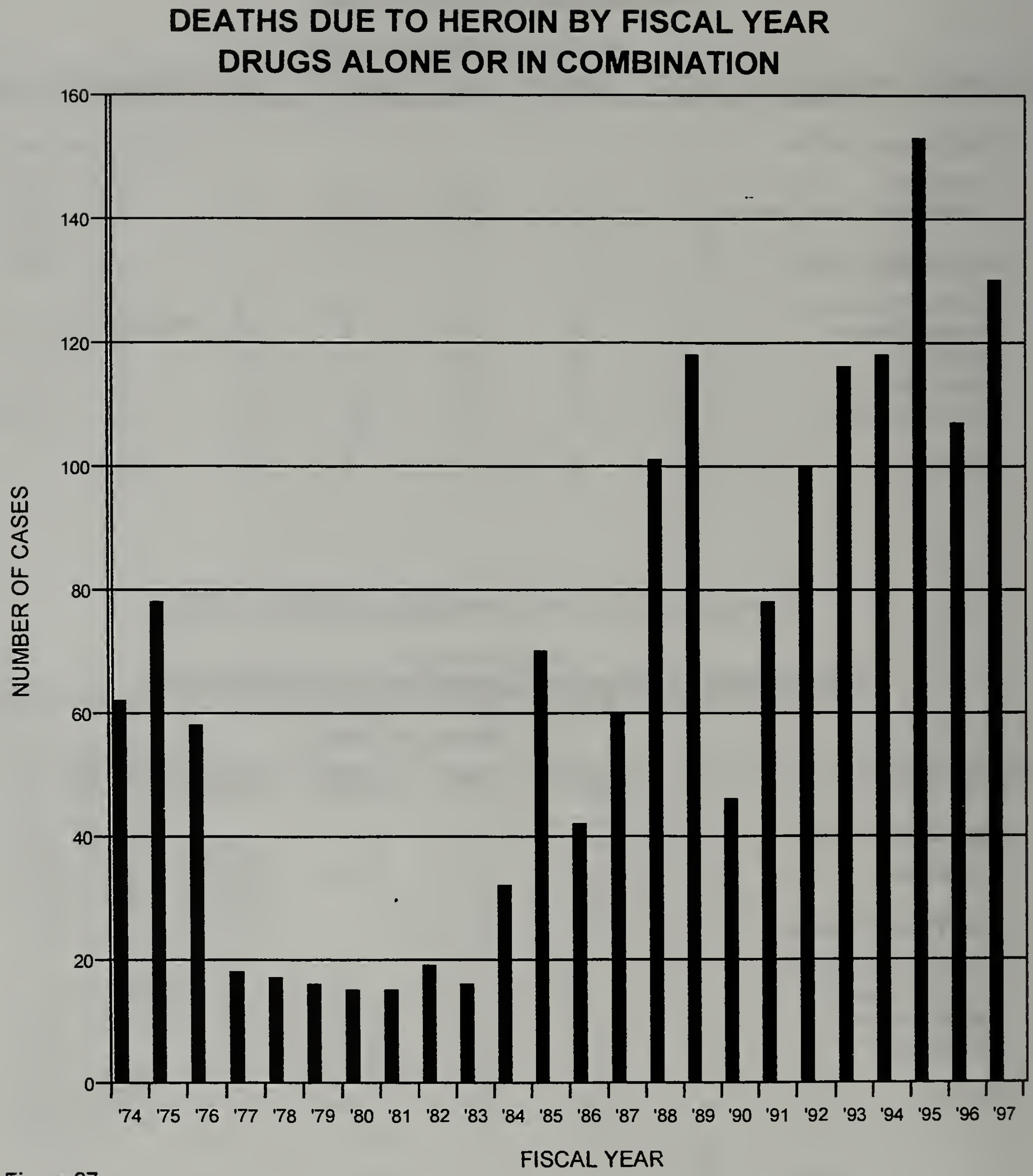

DEATHS DUE TO HEROIN BY FISCAL YEAR
DRUGS ALONE OR IN COMBINATION

Figure 27.

GLOSSARY

ALKALOID OF MORPHINE GROUP	Typically referred to as morphine-type alkaloid, it is the chemical substance found in body fluids after the injection of heroin or other drugs derived from opium.
AUTOPSY	A scientific dissection of the human body to determine the cause and nature of death in order to detect public health hazards, determine the method or type of death in homicides and improve the level of medical care in the community. In some cases, showing that no injury or wrongdoing was present is of great emotional and stabilizing value to the family
FORENSIC PATHOLOGY	The specialty field of medicine involving the application of medical and pathology principles in determining the cause and manner of sudden, unexpected, and medically unattended deaths. This includes the type and nature of injury, public health hazards, type or nature of homicide weapon, the relation of injury to death and interpreting other factors for the court. These data are prepared and presented to the judicial system or public health interests in keeping with the best available knowledge
MEDICAL EXAMINER	A physician specifically trained in forensic pathology who is responsible for investigating and determining the cause and manner of sudden or unexpected death
MODE OF DEATH	Indicates the manner of death, such as natural, accident, suicide or homicide, and is to be distinguished from cause of death, which is purely a medical determination
MODE UNDETERMINED	With the cause of death determined, investigative data do not clearly support one of two possible modes and either one is possible without prejudice
PATHOLOGY	That branch of medicine which deals with the essential nature of disease, especially in the structural or functional changes in tissues, organs or systems of the body causing disease. It involves the diagnosis of disease by microscopic or chemical analysis
SEROLOGY	That branch of pathology which deals with the analysis of blood and body fluids. Blood types for identification, exclusion of a suspect or judicial purposes are examples of the use in this office
TOXICOLOGY	The scientific study of poisons, their detection, actions and treatment. The relationship of drug levels to emotional or personality change, behavioral or reasoning ability are frequent decisions based on these data
TOXICOLOGY NOT VALID OR ELIMINATED	This term indicates that the deceased lived long enough after the injury to have eliminated some or all toxic agents from the body

SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO

ANNUAL REPORT

July 1, 1998 - June 30, 1999

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MEDICAL EXAMINER'S OFFICE

City and County of San Francisco, California

ANNUAL REPORT

July 1, 1998 - June 30, 1999

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April 3, 2000

The Honorable Willie L. Brown, Jr., Mayor
The Honorable Board of Supervisors
Director of Administrative Services
City and County of San Francisco

Dear Mayor Brown, Honorable Supervisors and Mr. Lee:

The attached Annual Report covers the fiscal year 1998-99. It contains the summation of the statistical and demographic data generated as a result of the work of the department. Each "bit" of data represents something about the life of a person. The purpose of presenting these data is to help establish the state of health of the citizens of the City and County of San Francisco and to help plan for the public welfare of those who live, work or who come to our city as visitors.

By looking at the information on injuries, infection or toxicity, some of the necessary basis for an informed opinion about the extent of our public health problems and thus solutions for our community health can then be formulated. By looking at the information on violence, drug abuse and preventable natural disease, treatment and prevention programs, those with the responsibility to make health-planning judgments will have a better basis for action decisions.

This report contains important information about the numbers, age, race and some of the circumstances of people who died in our community. It also includes data about living people who were examined or tested by the department. These include individuals arrested for driving under the influence of alcohol or drugs. Although this report can be read, it deserves to be studied. The staff members who prepared this report have put a considerable amount of time into gathering and interpreting the data, so that further understanding becomes relatively straightforward.

I believe that attention to the circumstances related to a death have paid off in reductions of certain types of deaths, such as sudden infant death syndrome, among all races. The report also related reduction in accidents, suicides and homicides. Drug abuse is still a major problem for both the living and the dead. As we learn more about the pharmacokinetics of drugs, the dangers and potential treatment become more apparent.

I am very proud of the work of the people in this department. Theirs is a very difficult physical and mental job. Many of the families we work with appreciate the help given by our employees, and that is a part of what we contribute to public health. The assurance that no disease can get a "foot in the door" of our community, that no sinister death will go undetected and that the data is true and reliable is the test that we must meet daily. The reputation of the department within the community is important to those families and agencies that have to depend upon our work.

Sincerely,

Boyd G. Stephens, M.D.
Chief Medical Examiner

Hall of Justice • 850 Bryant Street • San Francisco • CA 94103-4603 • Phone (415) 553-1694 • Fax (415) 553-1650

ACCREDITED NATIONAL ASSOCIATION OF MEDICAL EXAMINERS

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INTRODUCTION

The **Medical Examiner** is appointed by law to many responsibilities, the foremost of which is the investigation and certification of a variety of deaths including all deaths of other than natural causation, and any apparently natural deaths in which no physician can reasonably state the cause. The Medical Examiner can utilize any and all medico-legal investigative techniques, including autopsy, to establish both the medical cause of death, and mode or circumstances of death (natural, accident, homicide, suicide or undetermined).

The deaths which must be reported to the Medical Examiner, as required by various sections of the Government, Health and Safety and Penal codes, are as follows:

1. Homicide - known or suspected
2. Suicide - known or suspected
3. Following accident or injury (whether the accident or injury is the primary cause or contributory, with death occurring immediately or at some remote time)
4. Medical attendance of less than 20 days
5. No physician in attendance
6. Physician unable to state the cause of death (must be unable, not merely unwilling)
7. Poisoning (food, chemical, drug, therapeutic agents)
8. Occupational or industrial deaths
9. All deaths where a patient has not fully recovered from an anesthetic, whether in surgery, recovery room, or elsewhere
10. All deaths in operating rooms
11. All solitary deaths (unattended by physicians or other person in the period immediately preceding death)
12. All deaths in which the patient is comatose throughout the period of the physician's attendance
13. All deaths of unidentified persons
14. All deaths in which there are grounds to suspect that the death occurred in any degree from a criminal act
15. All deaths involving contagious disease - known or suspected - and constituting a public health hazard
16. Deaths in prison or while under sentence
17. All deaths associated with a rape - known or alleged - or crime against nature
18. All deaths related to or following abortion - known or suspected
19. All deaths involving drowning, fire, hanging, gunshot, stabbing, cutting, starvation, exposure, alcoholism, drug addiction, strangulation or aspiration

Additional mandated responsibilities include protecting and safekeeping of property belonging to deceased individuals, conducting inquests when indicated, maintaining proper public records, making reports to other agencies, identification of deceased persons, interment of indigent dead, and many other death related activities.

FORENSIC MEDICINE

Forensic medicine generally is considered to be a marriage of medicine and the forensic sciences oriented to medico-legal issues. The field is wide-ranging and growing, becoming even broader in scope than the traditional concept as practiced in Europe. As a Medical Examiner, we commonly examine living persons for medico-legal purposes, often interpreting the findings for court purposes.

There has been continued growth and accentuation of the role of forensic medicine in the legal and medico-legal world over the past year. This office has continued its role in forensic medicine for both living and dead, playing a vital role in the community.

We serve in a number of places in the community. Some of these include:

Examination and diagnosis of the living:

- Examination and evaluation of child abuse
- Examination and evaluation of sexual assault injuries
- Examination and evaluation of spousal abuse
- Evaluation of citizens' complaints against the Police Department
- Testimony and interpretation of hospital records and procedures
- Evaluation of force and patterned injuries
- Examination of victims and suspects for trace evidence and injuries
- Collection of blood from suspects and victims for serology, toxicology and other testing
- Court testimony on force, great body injury (GBI) and other issues
- Alcohol and drug interaction in driving under the influence cases and related issues
- Physiologic effects of drug interactions
- Toxicology, including environmental and industrial toxicities
- Teaching - hospitals, forensic, law enforcement, community
- Analysis for drugs on individuals on probation
- Analysis for drugs on management control cases for the County

Examination and evaluation of the dead:

- Scene investigation, reconstruction and analysis
- Evidence collection and testing
- Blood spatter analysis and interpretation
- Patterned evidence analysis and interpretation
- Trace evidence collection
- Time and place of death information
- Forensic autopsy - consultation and interpretation
- Analysis for chemical and limited serology testing
- Forensic toxicology
- Consultation with District Attorney and Public Defender
- Reconstruction Analysis and court presentation
- Teaching - forensic and legal

DEPARTMENT STATUS AND FUTURE

The principal difficulty for the department during the fiscal year immediately past was recruitment and retention of professional and investigative staff. Our salaries are not competitive, and the housing costs of the greater San Francisco area are higher than in other parts of the country. The added cost of commuting and the crowded roads are recognized nationally. There are few physicians training in this sub-specialty, so that the competition by each Medical Examiner's Office for each one is high. With the costs and time requirements for background checks, getting investigators or physicians on staff is a labor-intensive and long, drawn out process.

Keeping our computers and scientific instruments current is also a challenge. As technology changes rapidly, systems that are five to ten years old are often no longer supported by the manufacturer. Science is advancing so rapidly that new instruments and skills are necessary to stay close to the capabilities required by the judicial system. These specialty instruments are often expensive and require a considerable amount of training to operative efficiently.

The members of the department continue to work on child death prevention and child injury reduction. We are also working with other agencies toward reduction of domestic violence and drug abuse. Very significant reductions in childhood death, violent deaths and homicides by any means were noted.

There is a great deal more work to be done. Besides getting the office fully staffed and improving our equipment, we have targeted several tasks. Among these are working with other agencies to reduce injuries on City streets. Improved awareness of support available for families in stress, specifically for child and domestic violence has been a long-term activity, and one I want to pursue this year. It would also be very helpful to return to staffing that would allow teaching, both inside and outside the Department.

DEPARTMENTAL COSTS

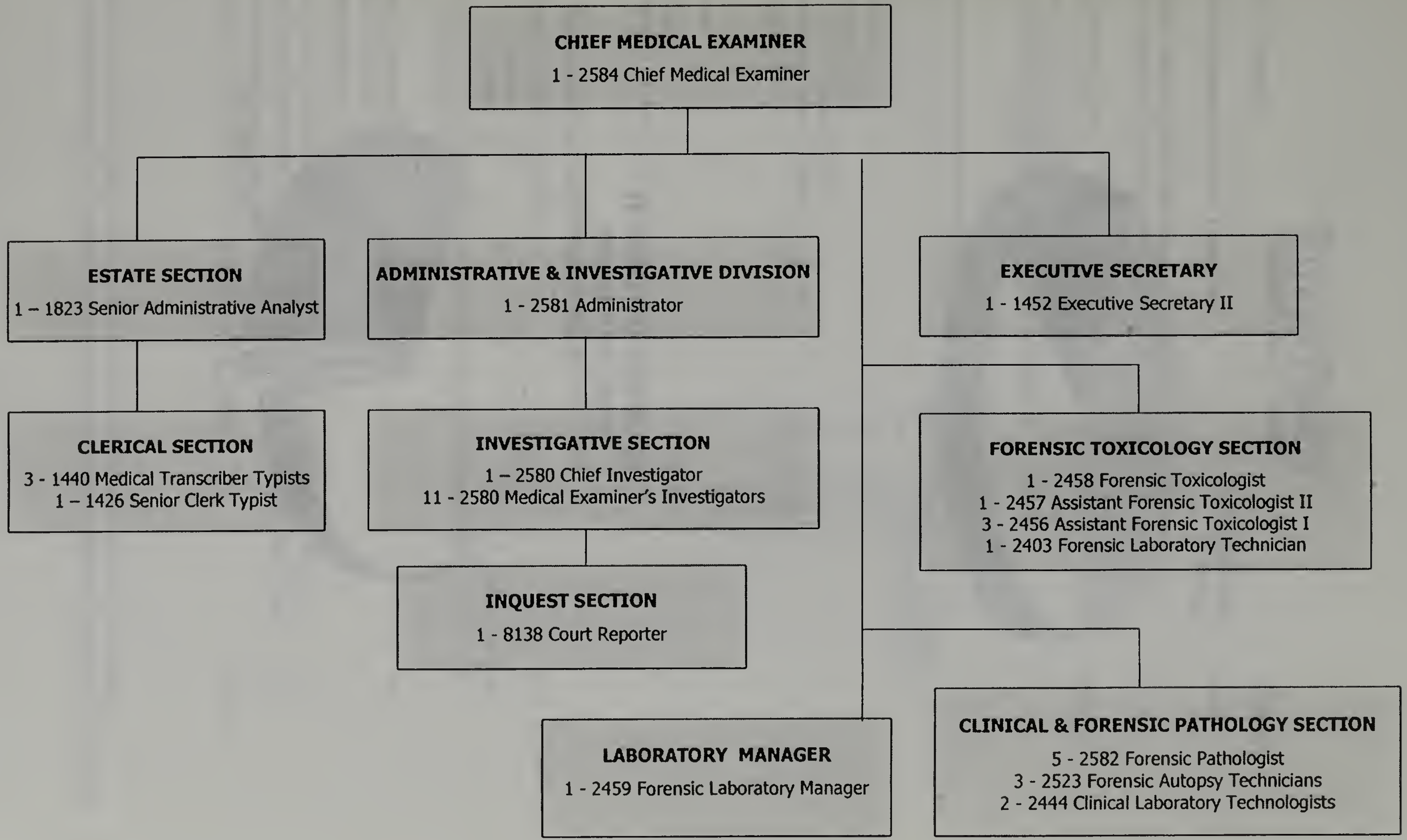
FISCAL YEAR 1998 - 1999

Total Budget	$3,557,167.00
Transfers to Controller: Health and Retirement.	$521,876.00
Net Budget (all other costs)	$3,035,291.00
Total Cases	4,449
Cost Per Case Investigated.	$682.24
Revenues (sales of records, public auctions, fee-for-service work)	$205,734.00
Total Costs Ad Valorum Taxes Per Case Investigated	$636.00

As indicated elsewhere, this includes all investigative, administrative, scientific and expert witness costs to the County.

ORGANIZATIONAL CHART

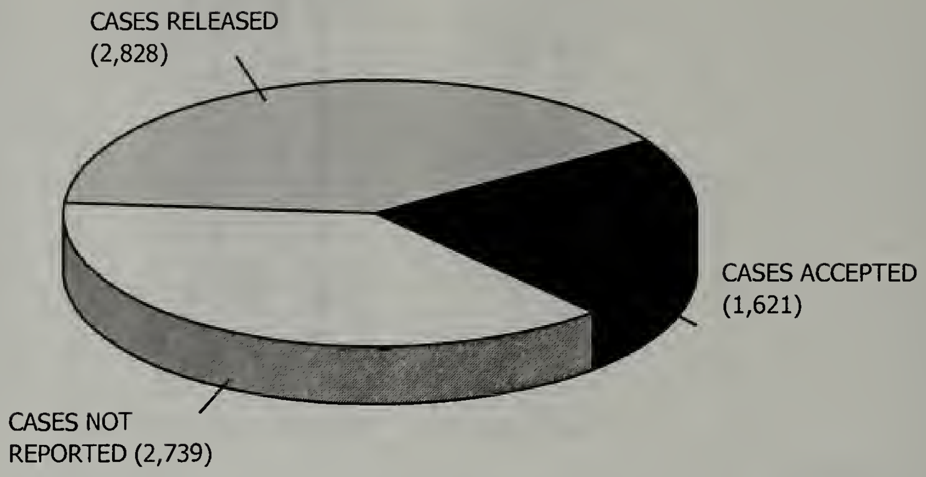
Medical Examiner's Office


CHIEF MEDICAL EXAMINER
1 - 2584 Chief Medical Examiner
ESTATE SECTION
1 – 1823 Senior Administrative Analyst
ADMINISTRATIVE & INVESTIGATIVE DIVISION
1 - 2581 Administrator
EXECUTIVE SECRETARY
1 - 1452 Executive Secretary II
CLERICAL SECTION
3 - 1440 Medical Transcriber Typists
1 – 1426 Senior Clerk Typist
INVESTIGATIVE SECTION
1 – 2580 Chief Investigator
11 - 2580 Medical Examiner's Investigators
FORENSIC TOXICOLOGY SECTION
1 - 2458 Forensic Toxicologist
1 - 2457 Assistant Forensic Toxicologist II
3 - 2456 Assistant Forensic Toxicologist I
1 - 2403 Forensic Laboratory Technician
INQUEST SECTION
1 - 8138 Court Reporter
LABORATORY MANAGER
1 - 2459 Forensic Laboratory Manager
CLINICAL & FORENSIC PATHOLOGY SECTION
5 - 2582 Forensic Pathologist
3 - 2523 Forensic Autopsy Technicians
2 - 2444 Clinical Laboratory Technologists

COUNTY DEATHS

FISCAL YEAR 1998-99

Figure 1.

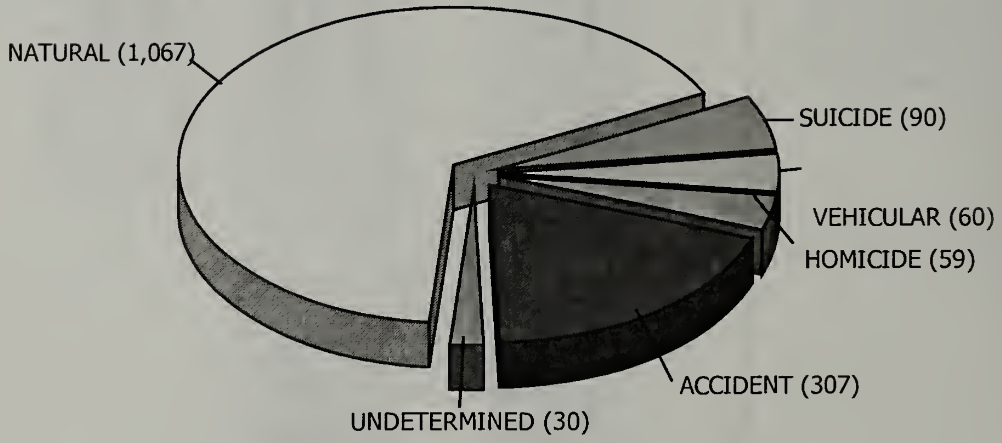


MANNER OF DEATH

FISCAL YEAR 1998-99

JURISDICTION ON 1,621 CASES

Figure 2.



FISCAL YEAR 1998-99

Total Deaths in County		7,188
Total Deaths Reported to Medical Examiner		4,449
Cases Reported, Investigated and Cleared by the Medical Examiner for physician's signature		2,828
Medical Examiner's Cases		1,621
% County Deaths Reported to Medical Examiner	61.9 %	
% County Deaths Having Medical Examiner's Jurisdiction	22.6 %	

Cases Accepted by the Medical Examiner (by manner of death) *

1. Natural Deaths (NC)	1,067	(65.8%)
2. Accidents (ACC)	307	(18.9%)
3. Suicides (SUI)	90	(5.6%)
4. Homicides (HOM)	59	(3.6%)
5. Mode Undetermined (UND)	30	(1.9%)
6. Sudden Infant Death Syndrome (SIDS)	8	(0.5%)
7. Vehicular (VEH)	60	(3.7%)

Autopsy Index

Full Autopsy	57%
Partial Autopsy / External Examination / Record Review **	43%

Dispositions Authorized by the Medical Examiner

1. Indigents and fetus dispositions		214
Adults	203	
Infants	11	
2. Cases cremated by funeral home with Public Administrator-controlled funds		53

Inquests Held or Depositions Taken	40

Identification

1. Persons brought to Medical Examiner's Office with insufficient identification	153
2. Persons subsequently identified by fingerprints, dental X-rays or other means	151
3. Persons interred as unidentified	2
4. Fingerprints taken and forwarded to FBI, CII, or SFPD	1,525

---

* The abbreviations following each manner of death will be used in most tables in this report.

** Includes 96 indigent cases, all of whom were externally examined by a Medical Examiner's Investigator.

EXAMINATIONS AND REFERRALS

FISCAL YEAR 1998-99

Examinations

Suspected child abuse	3

Specimens submitted for toxicology testing from living individuals

Living victims or defendants in violent crimes	48
Management control - other City departments	689
DUI suspects	

MEDICAL EXAMINER CASES
FISCAL YEAR 1998-99

In fiscal year 1998-99, there were 7,188 deaths in San Francisco County. Of these deaths, 4,449 were reported to the San Francisco Medical Examiner's Office. The Medical Examiner's Investigators examined the previous medical history, circumstances surrounding the deaths and, in many cases, the scene of the death, and determined that 1,621 of these deaths came under the jurisdiction of this office. (See Figure 1, page 8). Full or partial autopsies or external examinations were performed on all cases.

1. The highest total **number of deaths** occurred in January 1999. The highest number for the various manners of death occurred during other months (e.g., highest number of homicides in January 1999, suicides in October 1998, the highest numbers of vehicular deaths in September 1998, and non-vehicular accidents in May 1999). See Table I and Figure 3, page 12.

2. The **racial distribution** for each manner of death was quite variable. For example, the value of the ratio of whites/blacks was 3.6 overall, 5.2 for accidents, 7.5 for suicides (as compared to 27.8 for 1989-90, 13.5 for 1996-97, and 10.9 for 1997-98) and 0.6 for homicides. See Table II, page 13 and Figure 5, Page 15.

3. The **age range distribution** for each manner of death was also variable. For example, the highest number of accidental deaths and suicides occurred in the 40-49 year age group, the highest number of homicides occurred in the 20-29 year age group, and the highest number of vehicular deaths in the 70-79 year age group. See Table III, page 13.

4. The **overall distribution** of deaths by sex (ratio of male/female) was 2.0, but this varied by manner of death from 3.9 in deaths due to homicides to 1.2 in vehicular deaths. See Table IV and Figure 4, page 14.

MEDICAL EXAMINER CASES FOR 1998-99

TABLE I. MANNER OF DEATH - MONTHLY COMPARISON

	Manner of Death							
Month of Death	**ACC**	**HOM**	**SUI**	**NC**	**VEH***	**SIDS****	**UND**	**TOTALS**
July	27	2	10	82	4	1	2	128
August	19	6	4	66	5	1	1	102
September	30	3	6	66	10	0	1	116
October	22	8	14	111	8	2	3	168
November	25	6	7	85	9	0	4	136
December	33	5	8	95	2	2	3	148
January	25	9	7	122	5	0	4	172
February	19	3	4	97	1	1	1	126
March	20	3	12	88	5	0	0	128
April	33	3	6	78	3	0	2	125
May	34	4	6	98	3	0	7	152
June	20	7	6	79	5	1	2	120
TOTALS	**307**	**59**	**90**	**1,067**	**60**	**8**	**30**	**1,621**

* = Vehicular Death. These include 9 cases ruled to be homicide, 48 cases ruled to be accidental, 2 ruled to be suicide, and 1 with mode undetermined.

** = Sudden Infant Death Syndrome

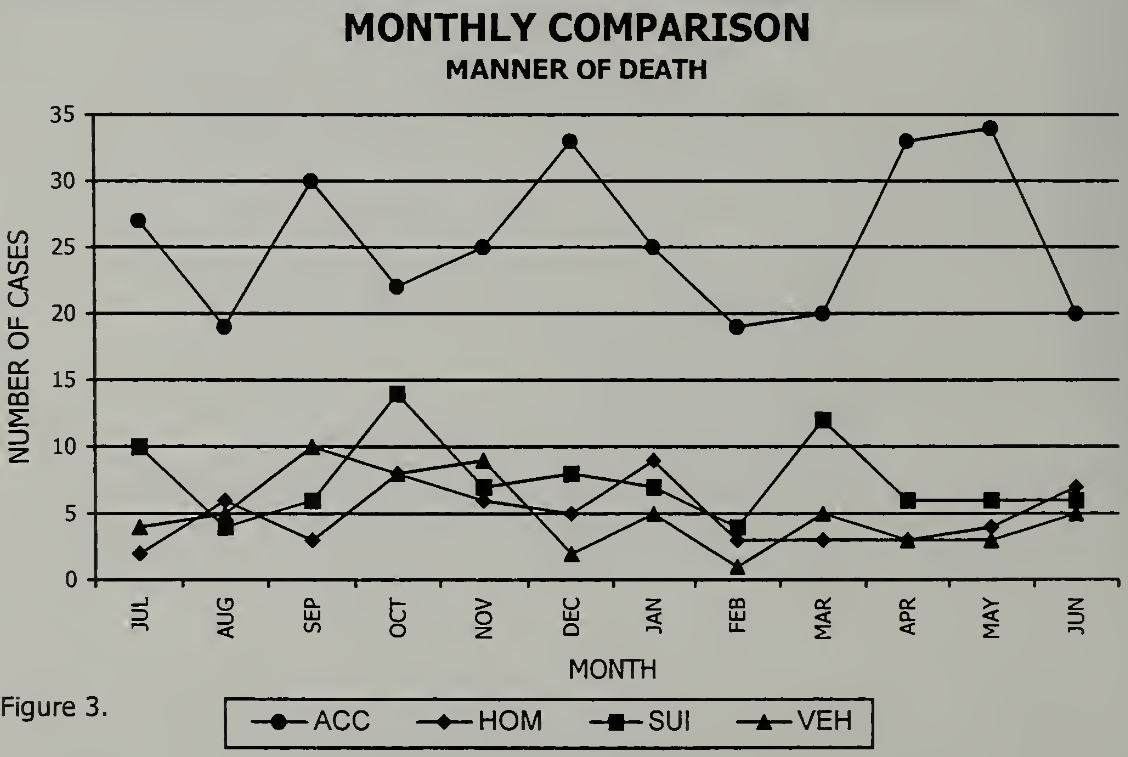


Figure 3.

TABLE II. MANNER OF DEATH BY RACE

Manner of Death

Race	ACC	HOM	SUI	NC	VEH*	SIDS**	UND	TOTALS
White	234 (76%)	17 (29%)	60 (67%)	697 (65%)	37 (62%)	3 (38%)	20 (67%)	1,068 (66%)
Black	45 (15%)	30 (51%)	8 (9%)	196 (18%)	6 (10%)	3 (38%)	6 (20%)	294 (18%)
Asian	21 (7%)	8 (14%)	19 (21%)	161 (15%)	12 (20%)	0 (0%)	2 (7%)	223 (14%)
Other / Unknown	7 (2%)	4 (7%)	3 (3%)	13 (1%)	5 (8%)	2 (25%)	2 (7%)	36 (2%)
TOTALS	**307**	**59**	**90**	**1,067**	**60**	**8**	**30**	**1,621**

TABLE III. MANNER OF DEATH BY AGE

Manner of Death

Age Group	ACC	HOM	SUI	NC	VEH *	UND	TOTALS
0-11 months	1	0	0	21	2	1	25
1-5 years	2	0	0	1	0	0	3
6-12 years	0	1	0	1	0	0	2
13-16 years	2	0	0	2	0	0	4
17-19 years	5	4	2	0	3	1	15
20-29 years	24	16	18	10	6	2	76
30-39 years	60	11	19	43	10	4	147
40-49 years	106	14	25	116	6	10	277
50-59 years	34	7	6	181	6	3	237
60-69 years	20	1	4	174	5	3	207
70-79 years	23	3	7	235	12	3	283
80-89 years	23	2	8	217	9	3	262
90 + years	7	0	1	73	1	0	82
Unknown	0	0	0	1	0	0	1
TOTALS	**307**	**59**	**90**	**1,075**	**60**	**30**	**1,621**

* = Vehicular Death. These include 9 cases ruled to be homicide, 48 cases ruled to be accidental, 2 ruled to be suicide, and 1 with mode undetermined.

** Includes 8 SIDS (Sudden Infant Death Syndrome) deaths.

TABLE IV. MANNER OF DEATH BY SEX

	Manner of Death							
Sex	**ACC**	**HOM**	**SUI**	**NC**	**VEH***	**SIDS****	**UND**	**TOTALS**
Male	225	47	71	680	33	4	22	1,082
Female	82	12	19	387	27	4	7	538
Unknown	0	0	0	0	0	0	1	1
TOTALS	**307**	**59**	**90**	**1,067**	**60**	**8**	**30**	**1,621**

* = Vehicular Death. These include 9 cases ruled to be homicide, 48 cases ruled to be accidental, 2 ruled to be suicide, and 1 with mode undetermined.

** = Includes 8 SIDS (Sudden Infant Death Syndrome) deaths.

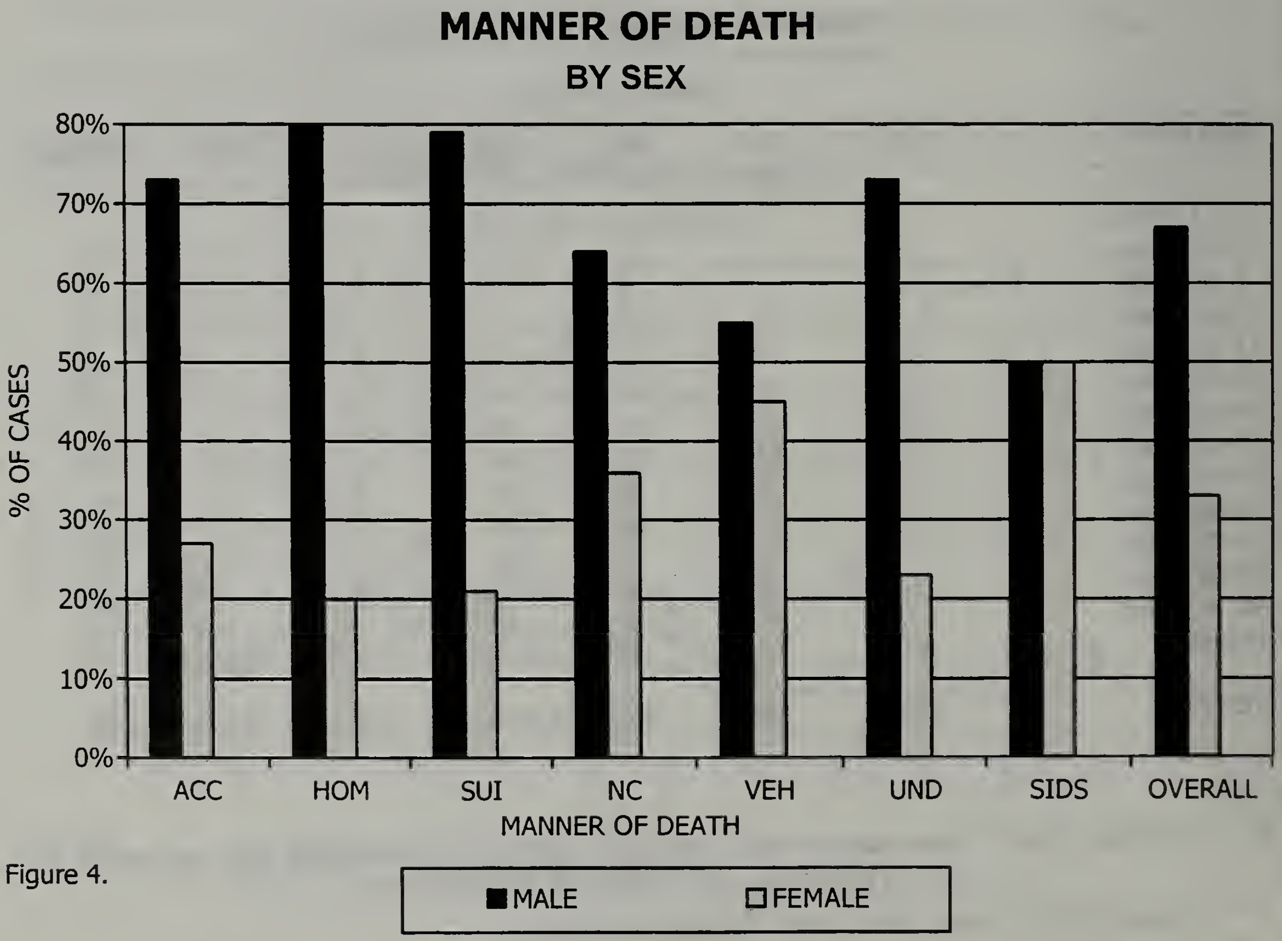


Figure 4.

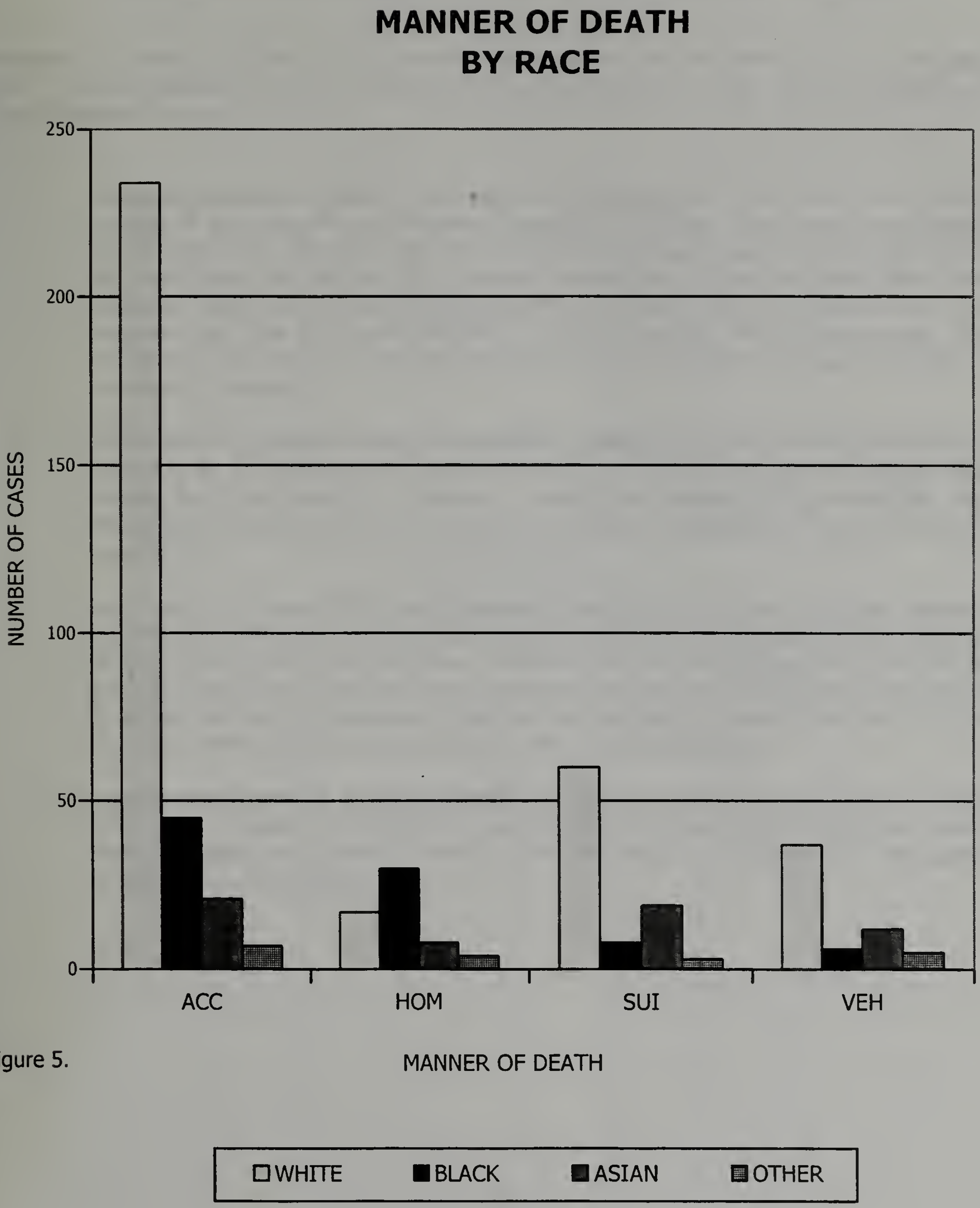

MANNER OF DEATH
BY RACE
NUMBER OF CASES
250
200
150
100
50
0
ACC
HOM
SUI
VEH
MANNER OF DEATH
☐ WHITE
■ BLACK
■ ASIAN
▨ OTHER

Figure 5.

YEARLY COMPARISON OF MEDICAL EXAMINER'S CASES

Comparisons of manners of death as well as methods used over the last ten fiscal years are presented in this section. The most significant differences which have occurred over the last ten years which can be observed in these tabulations include:

1. Regarding **manners of death**, the number of homicides (59) during fiscal year 1998-99 was a decrease of 21% from the 75 homicides recorded in 1997-98. The number of accidental deaths (307) decreased by 12% from 1997-98. The number of cases ruled to be suicide (92) decreased 17% from fiscal year 1997-98 to the lowest number seen in the last twelve fiscal years. The number of deaths due to natural causes (1,067) which came under the jurisdiction of this office decreased 1% from fiscal year 1997-98. The total number of vehicular deaths (60) was a decrease of 21% from fiscal year 1997-98. (See Table V and Figure 6, page 18, Figure 2, page 8, and Figure 10, page 22.)

2. With respect to **methods used in homicide deaths**, the most notable trend that has been continuing for the past six fiscal years is the decrease in homicides due to firearms (from 83 in 1993-94 to 35 in 1998-99). However, deaths from firearms still account for the largest percentage of homicides (58% in 1998-99). (See Table VI and Figure 7, page 19 and Figure 24, page 55).

3. There was a 17% decrease in the **number of suicides** during the fiscal year 1998-99 (92) as compared to 1997-98 (111). The total number of suicides is the lowest number seen in at least the last 13 fiscal years. The decrease in suicide deaths due to firearms from 1997-98 was 9.5% (from 21 to 19). This continues a long-term trend of decrease in firearm-caused suicide deaths for at least the last 13 fiscal years. Deaths from hanging decreased 40% from 1997-98 (32 to 19). (See. Table VII and Figure 8, page 20, and Figure 24, page 55).

4. Regarding **deaths ruled to be accidental**, the number of deaths from falls decreased markedly (27%) from 71 cases in 1997-98 to 52 cases in 1998-99. Deaths from falls are still second only to deaths from drugs as a leading cause of accidental deaths. (See Table VIII and Figure 9, page 21, and Figure 24, page 55).

YEARLY COMPARISONS OF MEDICAL EXAMINER'S CASES

TABLE V. YEARLY COMPARISON OF MANNER OF DEATH

	Fiscal Year									
Manner of Death	**‘89-‘90**	**‘90-‘91**	**‘91-‘92**	**‘92-‘93**	**‘93-‘94**	**‘94-‘95**	**‘95-‘96**	**‘96-‘97**	**‘97-‘98**	**‘98-‘9**
Accident	298	229	266	286	270	296	319	283	349	307
Homicide	94	88	123	127	118	94	98	63	75	59
Suicide	128	154	153	132	136	124	156	139	111	90
Natural	903	911	885	930	816	925	1,115	1,034	1,086	1,075
Vehicular*	76	83	79	79	54	80	58	56	76	60
Undetermined	76	72	53	58	42	30	40	44	36	30
TOTALS	**1,575**	**1,537**	**1,557**	**1,612**	**1,451**	**1,549**	**1,789**	**1,619**	**1,733**	**1,621**

MANNER OF DEATH

COMPARISON BY FISCAL YEAR

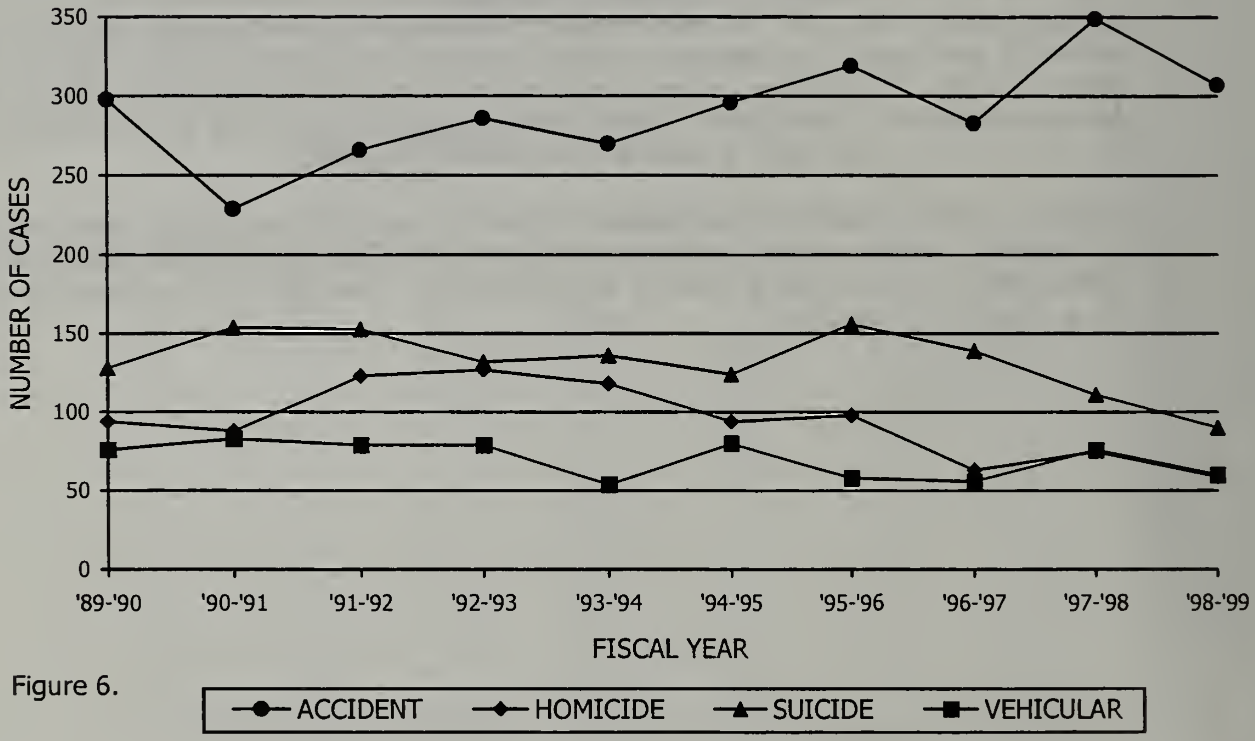


Figure 6.

* = Vehicular Death. These include 9 cases ruled to be homicide, 48 cases ruled to be accidental, 2 ruled to be suicide, and 1 with mode undetermined.

TABLE VI. YEARLY COMPARISON OF HOMICIDE* METHODS USED

	Fiscal Year									
Method Used	**'89-'90**	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**	**'98-'99**
Firearms	61	50	70	75	83	68	59	47	46	35
Stabbing	17	17	20	24	18	14	16	6	18	10
Traumatic Injury	10	14	22	16	12	9	18	8	8	8
Vehicular	10	16	15	14	11	6	2	11	7	9
Asphyxia / Strang.	3	5	7	4	1	3	3	1	3	3
Other	3	2	4	8	4	0	2	1	0	3
TOTALS	**104**	**104**	**138**	**141**	**129**	**100**	**100**	**74**	**82**	**68**

* Total includes 9 vehicular homicide deaths.

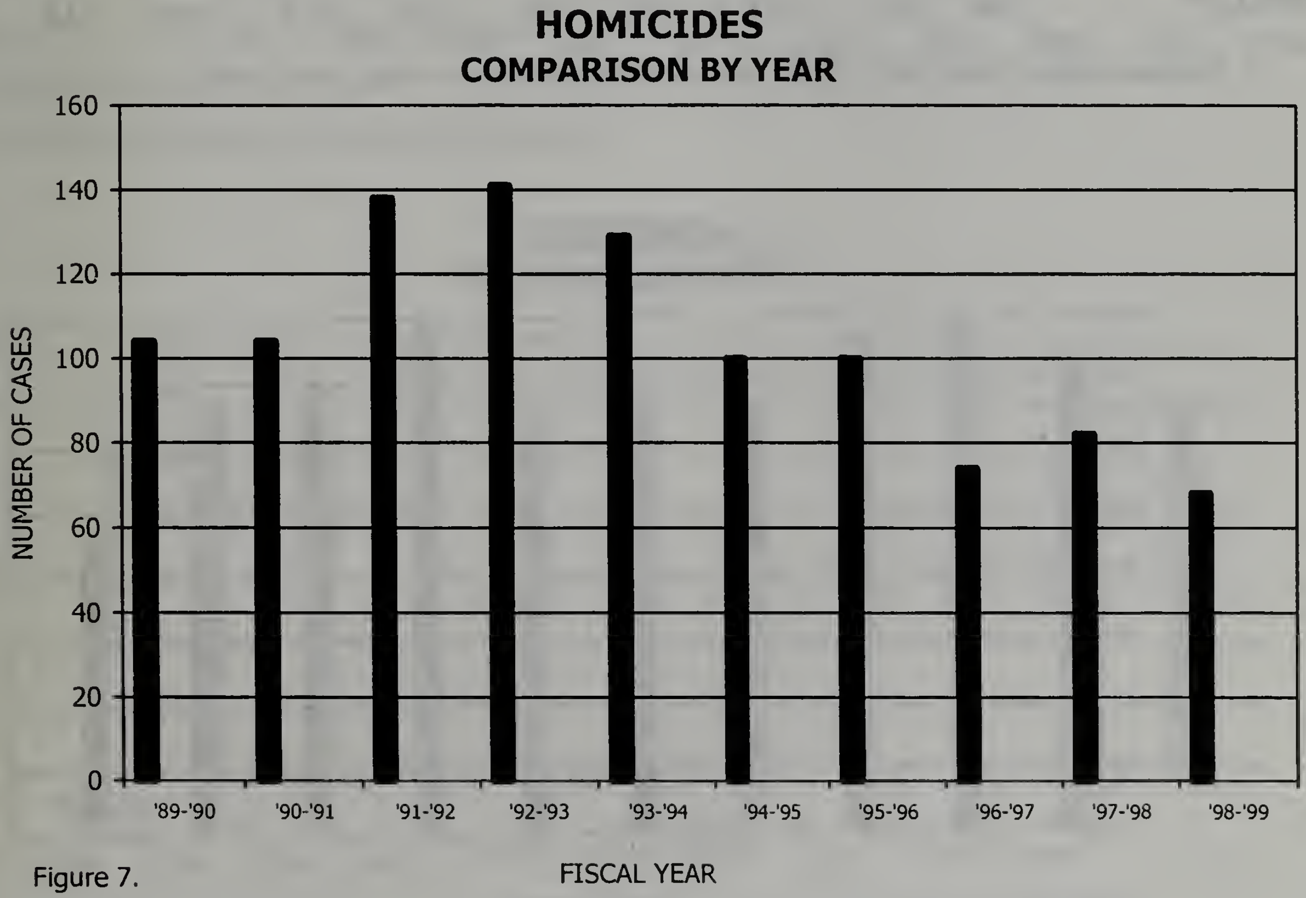


Figure 7.

TABLE VII. YEARLY COMPARISON OF SUICIDE METHODS USED

	Fiscal year									
Method Used	**'89-'90**	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**	**'98-'9**
Burning	0	2	0	0	1	4	0	1	0	2
CO Poisoning	9	5	6	5	3	1	3	1	2	1
Cutting/Stabbing	3	7	2	9	8	5	2	4	5	4
Drowning	0	1	2	3	1	3	9	5	4	2
Drugs/Poisons	31	36	44	31	25	37	49	31	27	25
Firearms	35	40	37	32	44	24	45	33	21	19
Hanging	23	25	23	22	22	19	19	30	32	19
Jump - Bay Bridge	2	0	2	1	5	2	1	2	1	3
Jump - Building	7	13	20	8	12	19	10	22	10	10
Jump - G.G. Bridge	10	13	4*	1	3	1	4	1	1	2
Jump - Other	-	-	2	3	3	0	1	0	1	0
Suffoc./Asphyxia	6	6	9	14	9	7	13	7	7	2
Vehicular/BART/Train	-	1	2	2	0	0	2	1	0	2
Other	2	6	0	2	0	2	0	2	0	1
TOTALS**	**128**	**155**	**153**	**133**	**136**	**124**	**158**	**140**	**111**	**92**

* Starting midway in fiscal year 1991-92, most Golden Gate Bridge suicides were handled by Marin County.

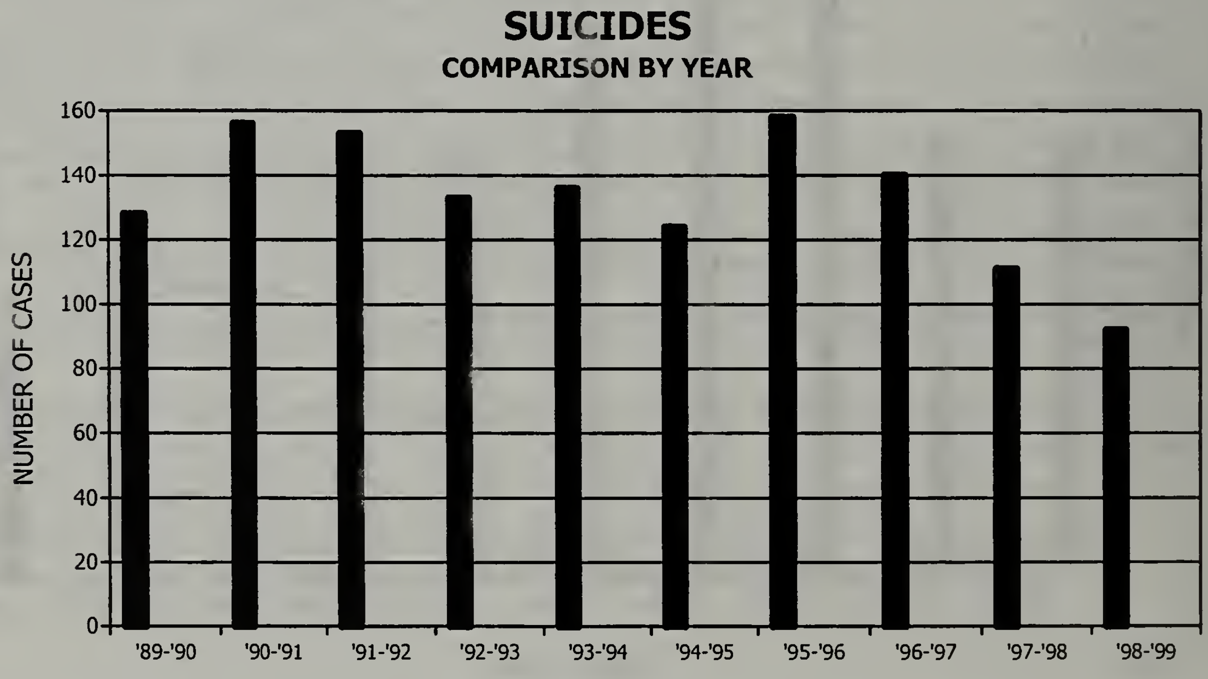


Figure 8.

TABLE VIII. YEARLY COMPARISON OF ACCIDENTAL* DEATH SITUATIONS

	Fiscal year									
Situation	**'89-'90**	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**	**'98-'99**
sphyxia	8	3	3	5	5	2	11	15	11	5
spiration	13	10	12	6	12	17	2	2	10	1
urns	15	10	4	4	8	7	5	9	9	4
rowning	10	12	4	5	11	6	5	10	9	6
rug Reactions	-	4	2	0	1	3	0	2	0	7
rug/Alc. Abuse Relat.	3	6	13	18	9	5	5	2	0	22
rugs/Poisons	157	97	123	156	158	169	210	166	199	182
alls	53	55	61	58	48	59	48	54	71	52
irearms	0	2	2	1	2	2	1	0	0	0
langing	0	2	0	1	1	1	2	0	0	0
lead Trauma	11	3	1	6	1	4	3	0	1	2
ledical Misadventure	7	12	18	8	5	6	13	13	20	15
moke/CO Inhal.	4	8	14	6	2	7	8	10	15	4
ther	5	5	9	9	7	8	6	0	4	7
OTALS	**298**	**229**	**266**	**286**	**270**	**296**	**319**	**283**	**349**	**307**

* Vehicular deaths are not included in this tabulation.

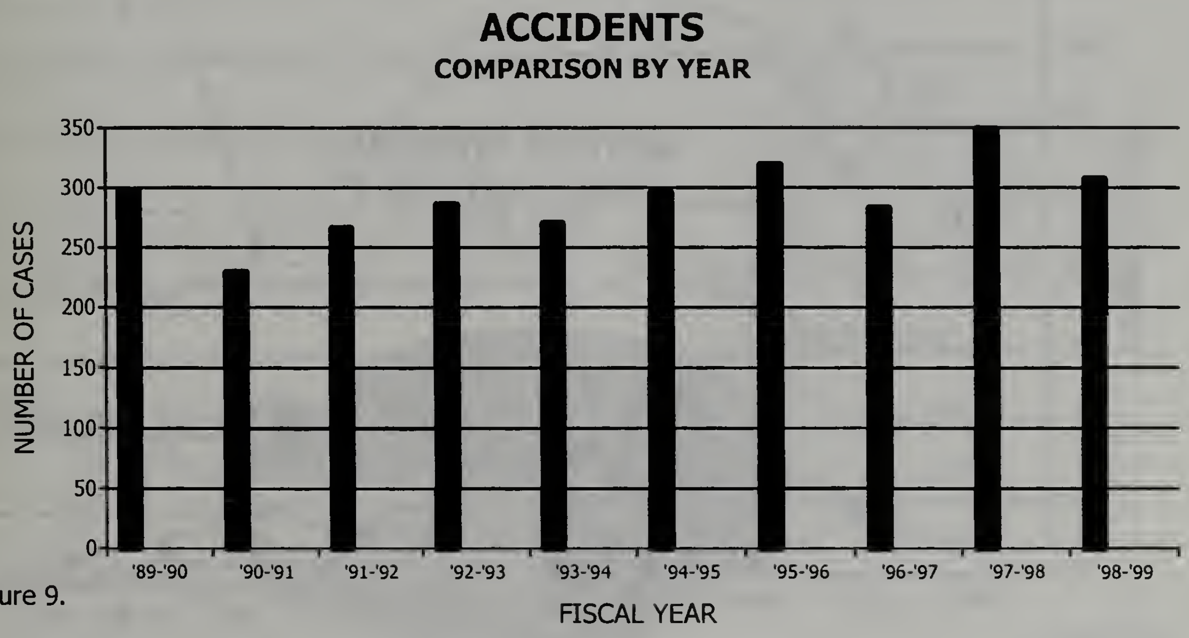


Figure 9.

Table IX. NUMBER OF VEHICULAR FATALITIES BY TYPE

	Fiscal Year									
Situation	**‘89-‘90**	**‘90-‘91**	**‘91-‘92**	**‘92-‘93**	**‘93-‘94**	**‘94-‘95**	**‘95-‘96**	**‘96-‘97**	**‘97-‘98**	**‘98-‘9**
Pedestrian	33	27	37	39	29	36	27	23	43	32
Bicycle Driver	2	4	1	2	1	4	3	5	3	2
Auto Driver	14	21	10	11	9	19	13	9	8	14
Auto Passenger	9	16	8	6	8	10	6	11	9	7
Motorcycle Driver	10	10	11	13	6	6	7	5	9	5
Motorcycle Pass.	1	0	4	0	0	0	0	0	0	0
Truck Driver	0	0	0	4	1	1	1	2	2	0
Other/Unknown	7	5	8	4	0	4	0	1	2	0
TOTALS	**76**	**83**	**79**	**79**	**54**	**80**	**57**	**56**	**76**	**60**

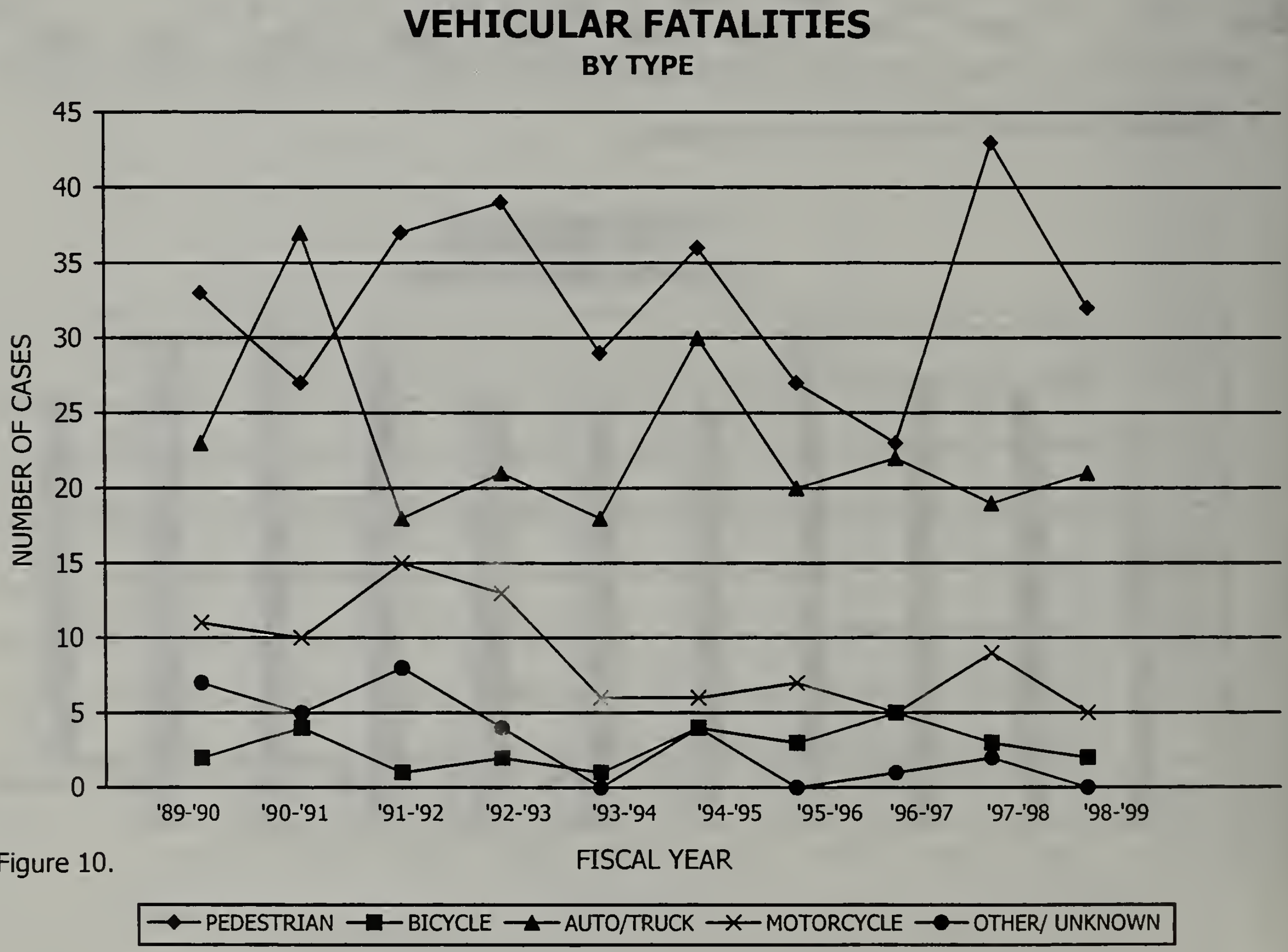


Figure 10.

TABLE IX. VIOLENT DEATHS

Of the 1,621 deaths investigated by the Medical Examiner's Office during 1998-99, 546 were determined to be the result of violence.

Mode	Total Number	% of Medical Examiner Cases	% of County Deaths
ACCIDENT	**355**	**21.9**	**4.9**
Vehicular	48	3.0	
Non-Vehicular	307	18.9	
SUICIDES	**92**	**5.7**	**1.3**
Vehicular	2	0.1	
Non-Vehicular	90	5.6	
HOMICIDE	**68**	**4.2**	**0.9**
Vehicular	9	0.6	
Non-Vehicular	59	3.6	
MODE UNDETERMINED	**31**	**1.9**	**0.4**
Vehicular	1	0.1	
Non-Vehicular	30	1.8	

VIOLENT DEATHS
FISCAL YEAR 1998-99
TOTAL = 546

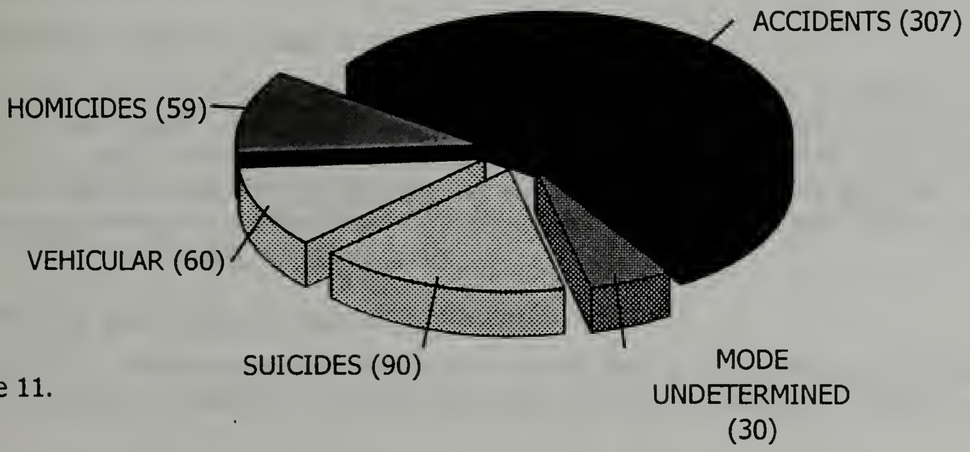


Figure 11.

ACCIDENTAL DEATHS

Three hundred and fifty-five (355) deaths were ruled to have been due to accidental means during the 1998-99 fiscal year. Of these, 307 were non-vehicular accidental deaths. The number of individuals dying by each manner of accidental death are indicated in Figure 12, page 26 and Table XI, page 27, and the percentages of all accidental deaths represented by each manner are indicated on Table XI, page 27.

Of the accidental death victims tested for alcohol and drugs (i.e. those in the hospital for less than 24 hours), many had significant levels of alcohol in their blood; some had abuse drugs present (See Table XI, page 27).

Abuse Drug Involvement (Table XII, page 28)

Overall, the number of times the four most common abuse drugs were found to be present in all accidental death cases was 256, only a 4% increase from fiscal year 1997-98 (245). (Note that more than one abuse drug may have been present in a single case.) This is in contrast to the dramatic increases seen previously - from 110 cases in fiscal year 1990-91 to 163 cases in fiscal year 1991-92 (a 48% increase!) to 222 cases in fiscal year 1992-93 (a further 36% increase from the preceding fiscal year). Of the deaths *caused by* drugs, heroin (measured as morphine) was seen most frequently (120 cases), an increase of 5% from last fiscal year's 114 cases. The second most frequently seen abuse drug in deaths *due to* drugs was cocaine (93 cases), a decrease of 1% from last fiscal year. Amphetamines were present in deaths *due to* drugs in 17 cases, a decrease of 37% from last year's count of 27 such deaths. The number of cases with cocaine *present* increased 5% from the previous fiscal year (99 to 104). The number of cases with heroin *present* increased by 8% (from 117 to 127 cases). Deaths with amphetamines *present* decreased 8% (28 to 23 cases). This follows a 33% decrease in cases with amphetamines present between 1994-95 (43 cases) and 1995-96 (29 cases). Abuse drugs may have played a role in accidental deaths due to asphyxia (choking) (2 cases) and falls (1 case).

Racial Distribution (Figure 13, page 29 and Table XIII, page 29)

Overall, accidental deaths occurred most frequently in whites. Deaths from asphyxia occurred more frequently in whites (100%) than would be anticipated by the overall involvement of whites in accidental deaths (73%). Asians are much less involved in deaths due to drug/poisons (3%) than would be expected by the involvement of Asians in accidental deaths (7%) and are much more heavily represented in deaths due to falls (19%). Blacks are less heavily represented in deaths by falls (6%) than would be expected based on the general involvement of blacks in all types of accidental deaths (15%). It should be noted that the percentages of accidents involving Blacks decreased markedly (44%) from last fiscal year (from 81 to 45 cases).

Age Distribution (Figure 14, page 30 and Table XIV, page 31)

Deaths due to medical misadventure were the most common cause of accidental deaths in the youngest age groups (0-12 years). There were 7 non-vehicular accidental deaths in the age group from 13-19 years during 1998-99, 5 of which were due to drugs. The most common cause of accidental deaths in people over 60 years of age was falls (69% of all deaths due to falls). Deaths due to drug overdoses are concentrated in the 30-49 year age group with 70% of all deaths due to drug overdoses occurring in this age group.

Distribution by Sex (Table XV, page 32)

Males are 2.7 times as likely as females to be the victims of non-vehicular accidental deaths. This difference is *more* pronounced in deaths due to drugs and *less* pronounced in deaths due to falls.

NON-VEHICULAR ACCIDENTS

This category includes all unintentional fatalities. There were 307 accidental deaths (non-vehicular) which accounted for 18.9% of the Medical Examiner death investigations for the fiscal year of 1998-99.

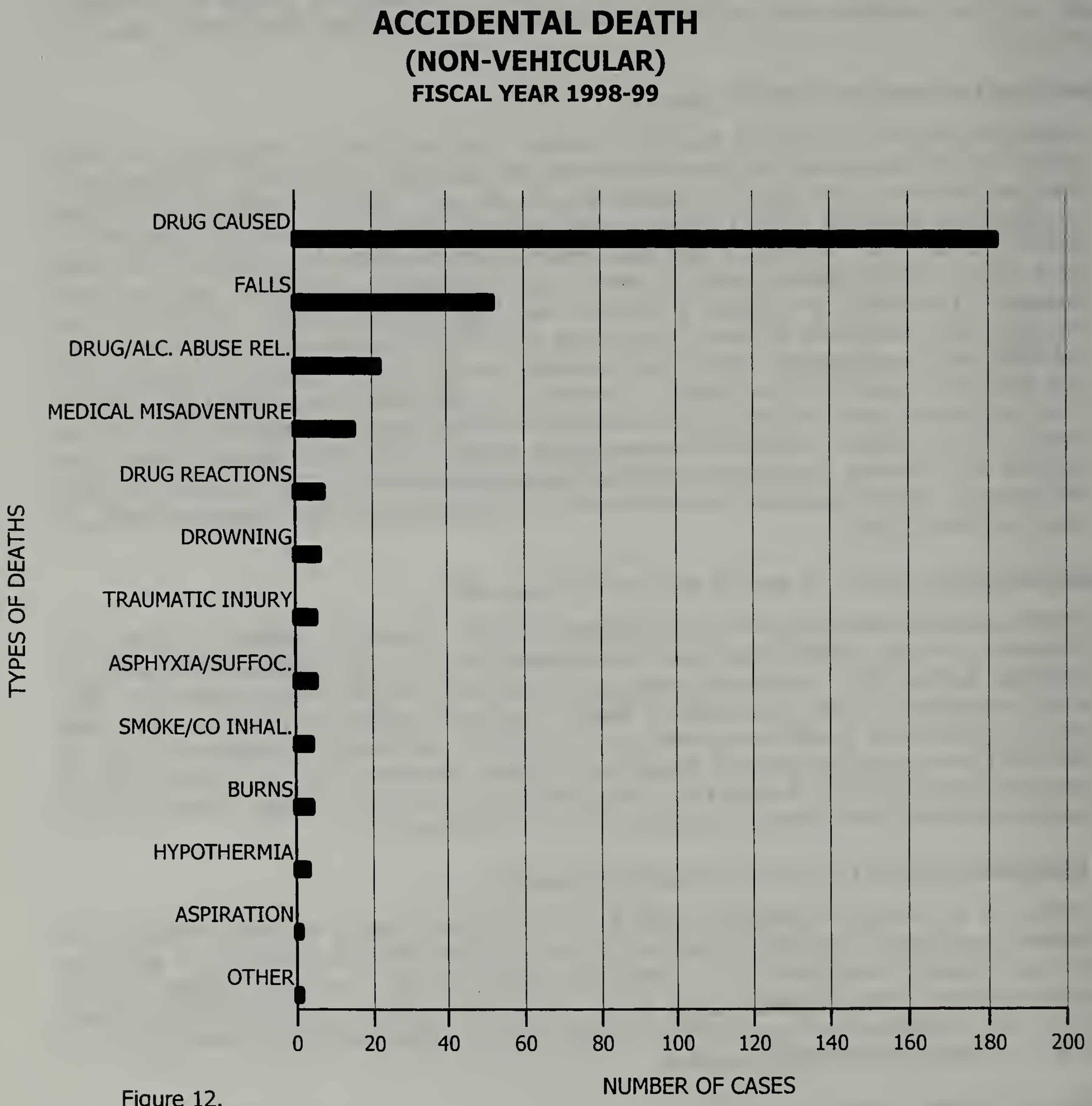


Figure 12.

TABLE XI. ACCIDENTAL DEATHS BY MODE

Drug and Alcohol Involvement

Method	Number	% Of Total Accidents	% With Alcohol *	# Positive (# Tested)	Ave. Alc. Conc. (g%)	% With Drugs **	# Positive (# Tested)
Asphyxia/Suffoc.	5	1.6	0	0 (of 2)	-	50	1 (of 2)
Aspiration	1	0.3	100	1 (of 1)	0.41	0	0 (of 1)
Burns	4	1.3	0	0 (of 3)	-	0	0 (of 3)
Drowning	6	2.0	50	3 (of 6)	0.13	0	0 (of 6)
Drug/Alc. Abuse Rel.	22	7.2	0	0 (of 15)	-	88	14 (of 16)
Drug Caused	182	59.3	45	79 (of 177)	0.16	82	150 (of 182)
Drug Reactions	7	2.3	0	0 (of 2)	-	0	0 (of 3)
Falls	52	16.9	30	7 (of 23)	0.24	6	1 (of 16)
Hypothermia	3	1.0	100	2 (of 2)	0.36	0	0 (of 2)
Medical Misadvent.	15	4.9	0	0 (of 2)	-	0	0 (of 3)
Traumatic Injuries	5	1.6	40	2 (of 5)	0.04	60	3 (of 5)
Smoke/CO Inhal.	4	1.3	0	0 (of 4)	-	25	1 (of 4)
Other	1	0.3	0	0 (of 0)	-	0	0 (of 0)
OVERALL	**307**	**-**	**39**	**94** **(of 242)**	**-**	**70**	**170** **(of 243)**

* Refers to percentage of victims (of those tested) with positive blood ethyl alcohol levels.
** Refers to percentage of victims (of those tested) with positive tests for abuse drugs.

It should be noted that a blood ethyl alcohol concentration of 0.08% is considered to be intoxicated when driving.

TABLE XII. ABUSE DRUGS PRESENT IN NON-VEHICULAR ACCIDENTS

	Drugs			
Situation	**Cocaine**	**PCP**	**Heroin**	**Amphetamines**
Asphyxia/Suffocation	1	0	1	0
Aspiration	0	0	0	0
Burns	0	0	0	0
Drowning	0	0	0	0
Drug/Alc. Abuse Related	7	0	6	4
Drug Caused	93	2	120	17
Drug Reactions	0	0	0	0
Falls	1	0	0	0
Hypothermia	0	0	0	0
Medical Misadventure	0	0	0	0
Smoke / CO Inhalation	1	0	0	0
Traumatic Injury	1	0	0	2
Other	0	0	0	0
TOTALS	**104**	**2**	**127**	**23**

NOTES: Drugs may have been present singly or in combination.
Drugs used therapeutically are not included in this tabulation.
There may be more than one drug present in a case.
Drugs were not tested for in every case.

Whether drugs are tested for or not depends on the type of case, the length of time the person was hospitalized before death, and the contribution that drug test results will make in determining the cause and manner of death. In many cases, drug testing is *not* performed. Therefore the above figures will provide only a rough idea of the relative incidence of abuse drug usage in accidental deaths. Bearing this in mind, the following evaluation is made.

The number of times the four most common abuse drugs were present in accidental deaths (256) increased only slightly (4%) from 1997-98 (245). The number of deaths with cocaine present (alone or in combination with other drugs) was 104, only 5% higher than in 1997-98 (99). The number of deaths with heroin present (127), measured as morphine, increased 8% from 117 in 1997-98. PCP was present in 2 accidental deaths. Accidental deaths in which amphetamines were present (23) were decreased 18% from the number in 1997-98 (28).

TABLE XIII. ACCIDENTAL DEATH SITUATIONS BY RACE

	Race								
Method	**White**		**Black**		**Asian**		**Other**		**Total**
Asphyxia / Suffocation	5	(100%)	0	(0%)	0	(0%)	0	(0%)	**5**
Aspiration	1	(100%)	0	(0%)	0	(0%)	0	(0%)	**1**
Burns	4	(100%)	0	(0%)	0	(0%)	0	(0%)	**4**
Drowning	5	(83%)	0	(0%)	1	(17%)	0	(0%)	**6**
Drug/Alc. Abuse Related	17	(77%)	3	(14%)	1	(5%)	1	(5%)	**22**
Drug / Poison Caused	141	(77%)	31	(17%)	5	(3%)	5	(3%)	**182**
Drug Reaction	5	(71%)	2	(29%)	0	(0%)	0	(0%)	**7**
Falls	38	(73%)	3	(6%)	10	(19%)	1	(2%)	**52**
Hypothermia	3	(100%)	0	(0%)	0	(0%)	0	(0%)	**3**
Medical Misadventure	9	(60%)	3	(20%)	3	(20%)	0	(0%)	**15**
Smoke / CO Inhalation	1	(25%)	2	(50%)	1	(25%)	0	(0%)	**4**
Traumatic Injury	4	(80%)	1	(20%)	0	(0%)	0	(0%)	**5**
Other	1	(100%)	0	(0%)	0	(0%)	0	(0%)	**1**
TOTALS	**234**	**(76%)**	**45**	**(15%)**	**21**	**(7%)**	**7**	**(2%)**	**307**

NOTE: Row percentages refer to percentages by race for each mode. These can be compared to total percentages for each race to see whether a mode is more or less prevalent in a racial group. For instance, deaths from falls appear to occur *more* frequently in Asians (19%) than the general involvement of Asians in accidental deaths (7%). Deaths from falls occur *less* frequently in Blacks (6%) than would be anticipated, based on the overall involvement of Blacks in accidental deaths (15%).

RACE OF NON-VEHICULAR ACCIDENT VICTIMS
FISCAL YEAR 1998-99

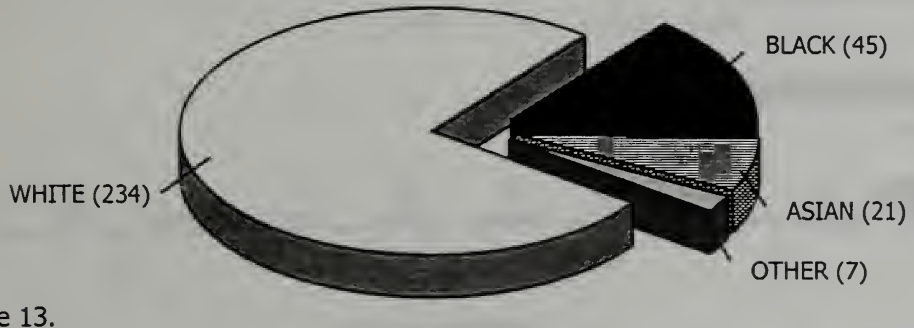


Figure 13.

AGE OF ACCIDENTAL DEATH VICTIMS

FISCAL YEAR 1998-99

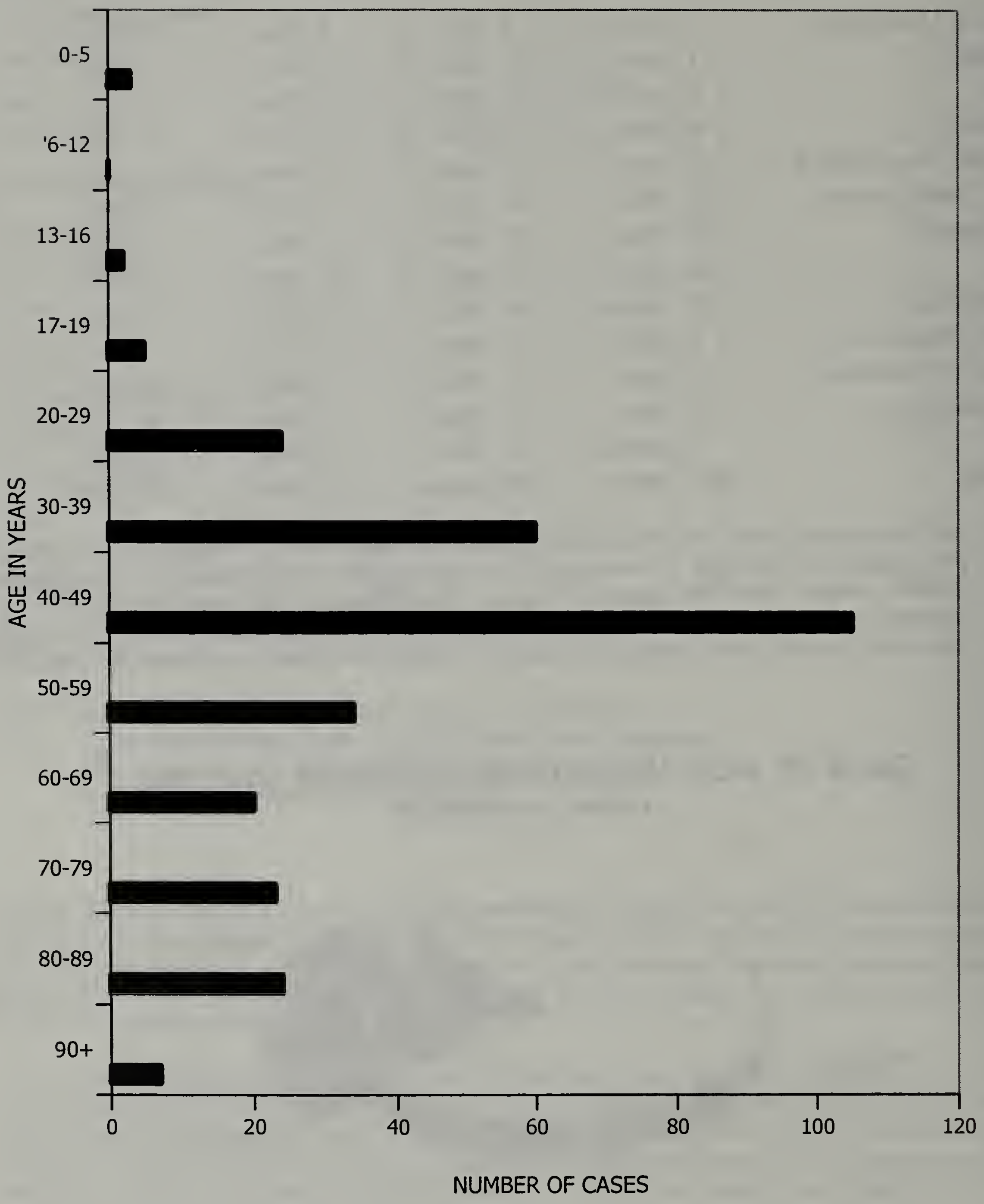


Figure 14.

TABLE XIV. ACCIDENTAL DEATH SITUATIONS BY AGE

Age Range - Years

lethod	**0-5**	**6-12**	**13-16**	**17-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80+**	**Ave. Age**
sphyxia	1 (20%)	0	0	0	0	0	1 (20%)	0	0	1 (20%)	2 (40%)	58.0
spiration	0	0	0	0	0	1 (100%)	0	0	0	0	0	30.0
urns	0	0	0	0	0	0	0	1 (25%)	0	1 (25%)	2 (50%)	76.0
rowning	0	0	0	0	2 (33%)	1 (17%)	0	0	1 (17%)	1 (17%)	1 (17%)	49.2
rug/Alc. Abuse Rel.	0	0	0	0	1 (5%)	4 (18%)	12 (55%)	5 (23%)	0	0	0	43.0
rug/Poison Caused	0	0	1 (0.5%)	4 (2%)	18 (10%)	48 (26%)	80 (44%)	21 (12%)	7 (4%)	1 (0.5%)	2 (1%)	41.4
ug React.	0	0	0	0	0	2 (29%)	2 (29%)	0	1 (14%)	0	2 (29%)	57.3
lls	0	0	1 (2%)	1 (2%)	2 (4%)	2 (4%)	6 (12%)	4 (8%)	8 (15%)	10 (19%)	18 (35%)	66.8
/pothermia	0	0	0	0	0	0	1 (33%)	1 (33%)	1 (33%)	0	0	56.3
ledical Misadvent.	2 (13%)	0	0	0	0	1 (7%)	0	1 (7%)	1 (7%)	7 (47%)	3 (20%)	62.9
noke/CO Inhalation	0	0	0	0	0	0	1 (25%)	0	1 (25%)	1 (25%)	1 (25%)	66.0
aumatic Injury	0	0	0	0	1 (20%)	1 (20%)	2 (40%)	1 (20%)	0	0	0	38.4
her	0	0	0	0	0	0	0	0	0	1 (100%)	0	72.0
TALS Of Total	**3 (1%)**	**0 (0%)**	**2 (0.6%)**	**5 (2%)**	**24 (8%)**	**60 (20%)**	**105 (34%)**	**34 (11%)**	**20 (7%)**	**23 (7%)**	**31 (10%)**	**48.6**

NOTE: Row percents refer to percentage by age range for each mode. These can be compared to total percentages for each age range to see if a mode is more or less prevalent in an age group. For example, drowning occurred *more* frequently in the 20-29 year age group (33%) than the general involvement of this age group in accidents (8%) while falls in the 30-39 year age group occurred *less* frequently (4%) than all accidents in this age group (20%). Falls in the age group 60-80+ occurred *more* frequently (69%) than all accidents in this age group (24%).

TABLE XV. ACCIDENTAL DEATH SITUATIONS BY SEX

	Sex	
Method	**Male**	**Female**
Asphyxia	2 (40%)	3 (60%)
Aspiration	1 (100%)	0 (0%)
Burns	0 (0%)	4 (100%)
Drowning	4 (67%)	2 (33%)
Drug / Alcohol Abuse Related	14 (6%)	8 (36%)
Drug / Poison Caused	153 (84%)	29 (16%)
Drug Reactions	4 (57%)	3 (43%)
Falls	31 (60%)	21 (40%)
Hypothermia	2 (67%)	1 (33%)
Medical Misadventure	7 (47%)	8 (53%)
Smoke / CO Inhalation	1 (25%)	3 (75%)
Traumatic Injury	5 (100%)	0 (0%)
Other	1 (100%)	0 (0%)
TOTALS (% of Total)	**225 (73%)**	**82 (27%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths from drugs/poisons appear to occur more frequently in males (84%) than the general involvement of males in accidental deaths (73%) while deaths from falls occurred more frequently in females (40%) than all accidental deaths in females (27%).

VEHICULAR DEATHS

In 1998-99, there were 60 vehicular fatalities in San Francisco, a decrease of 16 (21%) from 1997-1998. The number of such fatalities by type is indicated in Figure 15, page 34 and Table XV, page 35. Percentages of all vehicular fatalities by type are shown in Table XV, page 35. The largest number of vehicular fatalities involved pedestrians; the second largest number involved automobile drivers. Motorcycle driver fatalities decreased by 4 from 9 in 1997-98 to 5 in 1998-99. Pedestrian fatalities have decreased 26% from 43 in 1997-98 to 32 in 1998-99.

Of the vehicular fatalities tested for alcohol (i.e., those in the hospital for less than 24 hours), motorcycle drivers and pedestrians had the highest average blood ethyl alcohol concentration (0.22%).

Abuse Drug Involvement (Table XVII, page 35)

Cocaine was the abuse drug seen most frequently in vehicular fatalities (2 times). The number of times abuse drugs were found in vehicular fatalities was 3 in 1998-99, 6 in 1997-98, 12 in 1996-97, 3 in 1995-96, 4 in 1994-95, 5 in 1993-94, and 10 in 1991-92.

Age Distribution (Table XVIII, page 36, Table XIX, page 37, and Figure 16, p. 36)

The mean age of auto drivers (58.5) was the highest seen for any type of traffic fatality with the 60+ year age group being overrepresented in the pedestrian fatalities (53%) as compared to the overall involvement of this age group in all types of traffic fatalities (45%). The mean age of motorcycle drivers (39.8 years) was the lowest seen for any type of traffic fatality. The number of vehicular fatalities in the 20-29 year age group was markedly decreased (70%) from last fiscal year (20 to 6 cases).

Distribution by Sex (Table XIX, page 37)

Overall, Males were the predominant victims of vehicular fatalities (55%).

Racial Distribution (Table XIX and Figure 17, page 37)

Overall, vehicular fatalities occur most frequently in white non-Hispanics (53%). Asians were represented more heavily among deaths of auto passengers (43%) than would be expected by their involvement in all vehicular fatalities (20%).

VEHICULAR DEATHS

In San Francisco, there were 60 vehicle-related fatalities (48 accidents and 9 homicides, 2 suicides, and 1 undetermined) accounting for 3.7% of the Medical Examiner death investigations for the fiscal year 1998-99.

TYPES OF VEHICULAR DEATHS

FISCAL YEAR 1998-99

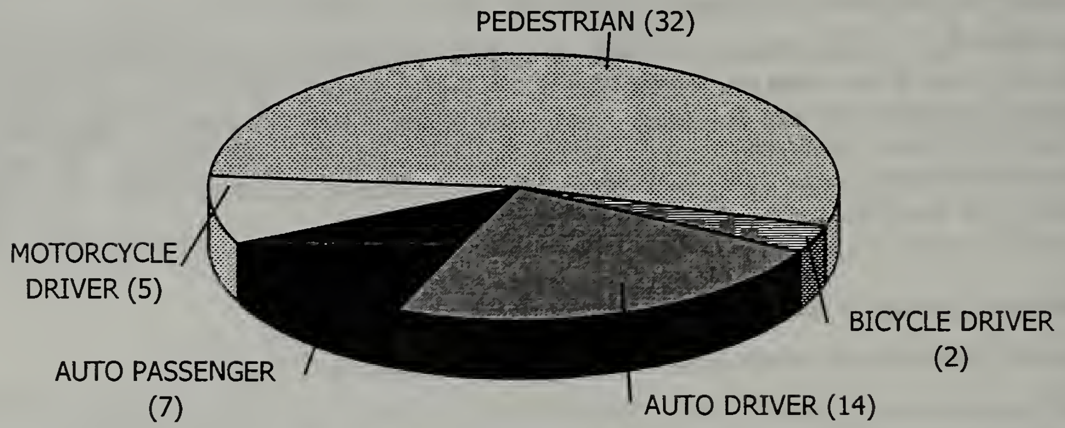


TABLE XVI. VEHICULAR FATALITIES IN 1998-1999

Drug and Alcohol Involvement

lethod	Number	% W/ Alc.*	# Positive (# Tested)	Ave. Alc. Conc. (g%)	% With Drugs**	# Positive (# Tested)	% W/ Drugs & Alcohol	# Positive (# Tested)
edestrian	32 (53%)	14%	4 (of 29)	0.22	5%	1 (of 20)	0%	0 (of 20)
uto Driver	14 (23%)	25%	3 (of 12)	0.06	8%	1 (of 12)	0%	0 (of 12)
uto Passenger	7 (12%)	50%	3 (of 6)	0.07	0%	0 (of 6)	0%	0 (of 6)
lotorcycle Driver	5 (8%)	80%	4 (of 5)	0.22	20%	1 (of 5)	20%	1 (of 5)
icycle Driver	2 (3%)	0%	0 (of 2)	0	0%	0 (of 2)	0%	0 (of 2)
OTALS	**60**	**26%**	**14** **(of 54)**	**-**	**7%**	**3** **(of 45)**	**2%**	**1** **(of 45)**

* Refers to percentages of victims (of those tested) with positive blood ethyl alcohol levels.
** Refers to percentage of victims (of those tested) with positive blood tests for abuse drugs.

TABLE XVII. ABUSE DRUGS PRESENT IN VEHICULAR FATALITIES

Drugs

Situation	Cocaine	PCP	Heroin	Amphetamines
Pedestrian	1	0	0	0
Auto Driver	0	0	0	1
Auto Passenger	0	0	0	0
Motorcycle Driver	1	0	0	0
Bicycle Driver	0	0	0	0
TOTALS	**2**	**0**	**0**	**1**

TABLE XVIII. VEHICULAR FATALITIES BY AGE

	Age Range - Years									
Situation	**0-5**	**6-12**	**13-16**	**17-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**
Auto Driver	0	0	0	0	3 (21%)	1 (7%)	1 (7%)	1 (7%)	2 (14%)	3 (21%)
Auto Passenger	1 (14%)	0	0	2 (24%)	0	1 (14%)	1 (14%)	0	0	0
Motorcycle Driver	0	0	0	0	1 (20%)	2 (40%)	1 (20%)	1 (20%)	0	0
Pedestrian	1 (3%)	0	0	1 (3%)	1 (3%)	6 (19%)	3 (9%)	3 (9%)	3 (9%)	9 (28%)
Bicycle Driver	0	0	0	0	1 (50%)	0	0	1 (50%)	0	0
TOTALS **% Of Totals**	**2** **(3%)**	**0** **(0%)**	**0** **(0%)**	**3** **(5%)**	**6** **(10%)**	**10** **(17%)**	**6** **(10%)**	**6** **(10%)**	**5** **(8%)**	**12** **(20%)**

NOTE: Row percents refer to percentages by age group for each situation. These can be compared to tc percentages for each age group to see if a situation is more or less prevalent in an age group. I example, accidental deaths of motorcycle drivers in the 30-39 year age group occur *more* frequen (40%) than the general involvement of this age group in vehicular fatalities (17%). Also, acciden deaths of auto passengers in the 13-19 year age group occurred more frequently (24%) than the gene involvement of this age group in vehicular fatalities (5%). Auto driver fatalities are more prevalent in t 60+ age group (56%) than the general involvement of this age group in all vehicular fatalities (45%).

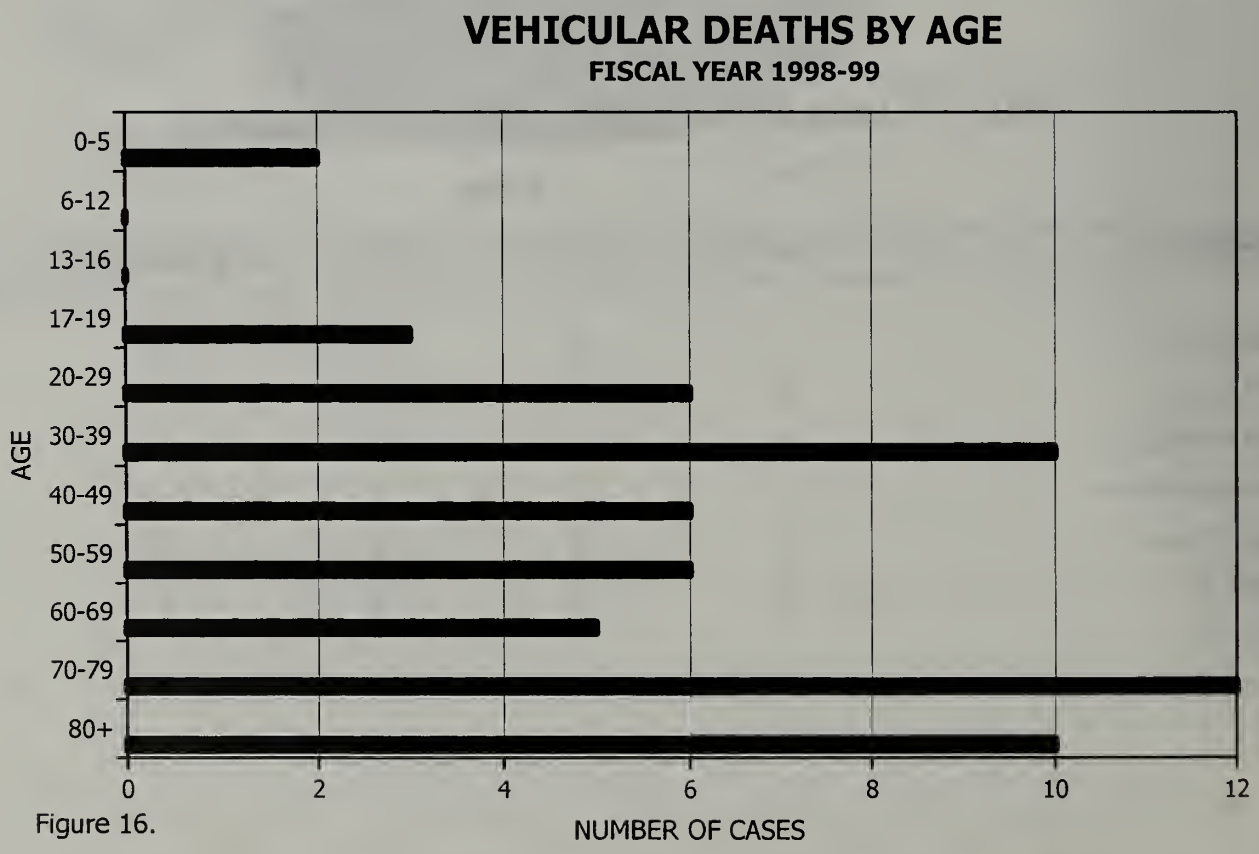


Figure 16.

TABLE XIX. DEMOGRAPHICS OF VEHICULAR FATALITIES

	Sex		Race					Age
Situation	**M**	**F**	**W-NH**	**W-H**	**B-NH**	**A**	**O/Unk**	**Average**
Auto Driver	8	6	8	1	0	3	2	
	(57%)	(43%)	(57%)	(7%)	(0%)	(21%)	(14%)	58.5
Auto Passenger	3	4	1	0	2	3	1	
	(43%)	(57%)	(14%)	(0%)	(29%)	(43%)	(14%)	41.0
Motorcycle Driver	5	0	5	0	0	0	0	
	(100%)	(0%)	(100%)	(0%)	(0%)	(0%)	(0%)	39.8
Pedestrian	16	16	17	4	3	6	2	
	(50%)	(50%)	(53%)	(13%)	(9%)	(19%)	(6%)	56.6
Bicycle Driver	1	1	1	0	1	0	0	
	(50%)	(50%)	(50%)	(0%)	(50%)	(0%)	(0%)	40.0
Average	**33**	**27**	**32**	**5**	**6**	**12**	**5**	
Average %	**(55%)**	**(45%)**	**(53%)**	**(8%)**	**(10%)**	**(20%)**	**(8%)**	**53.3**

NOTE: Row percentages refer to percentage by demographic characteristics for each situation. These can be compared to total percentage for each characteristic to see whether a situation is more or less prevalent in any one characteristic. For example, accidental deaths of motorcycle drivers occur *more* frequently in males (100%) than the general involvement of males in vehicular fatalities (55%). Also, deaths of automobile passengers occur *more* frequently in Asians (43%), than the general involvement of Asians in vehicular fatalities (20%). The average age of all types of vehicular fatalities is increased over the previous fiscal year.

RACE OF VEHICULAR DEATH VICTIMS

FISCAL YEAR 1998-99

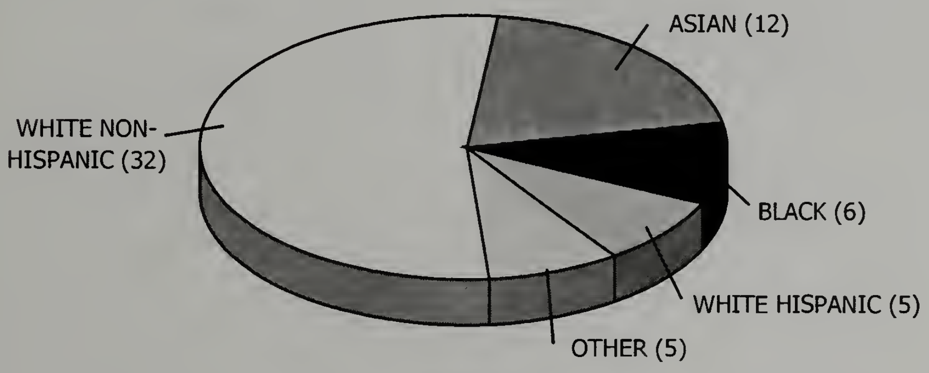


Figure 17.

SUICIDES

The determination of suicide as a manner of death represents the summation of scene investigation, including a review of psychological state, autopsy, pathology, toxicology and, frequently, other investigation. To the best of our knowledge, ours is the only Medical Examiner's Office routinely performing toxicology testing on multiple organs and/or body fluids in order to evaluate the metabolic status of a drug or drugs.

Realizing the immense emotional impact on family, the diagnosis of suicide is never made lightly, and always represents a decision made on the basis of data sufficient to defend that decision in a court of law, if necessary. Should these data be inconclusive, the victim automatically gets the benefit of the doubt.

Suicide takes a tremendous toll oN our young people. The relative number jumping from the Golden Gate Bridge would not seem to warrant the publicity assigned them as compared to the evident need for help for individuals using other methods.

To help understand the problem, and hopefully, to aid in reduction of suicides, this office has supported suicide prevention and research programs for many years. It is hoped that this work will help to reduce this needless loss.

The majority of these deaths are situation reactions, and if given momentary trained support, are potentially preventable.

SUICIDAL DEATHS

Ninety (90) deaths were ruled to have been due to suicide during the 1998-99 fiscal year and are the basis for the tabulations in this Section. The number of individuals dying by each method of suicide are presented in Figure 18, page 41, and Table XX, page 42, and the percentages of all suicidal deaths by type are indicated in Table IX, page 42, along with alcohol and drug involvement for each mode.

Abuse Drug Involvement (Table XXI, page 42)

Abuse drugs were present 8 times in suicidal deaths in 1998-99 as compared to 19 times in 1997-98. The abuse drugs seen most frequently in suicidal deaths were cocaine (4 times) and amphetamines (2 times). This contrasts with 10 cases of suicide with cocaine present in 1997-98. Amphetamines were found in 5 cases of suicidal death in 1997-98. Abuse drugs were associated more frequently with deaths caused by hanging than with any other means of suicide.

Racial Distribution (Table XXII and Figure 19, page 43)

Deaths from suicide occurred most frequently in whites (67% of total suicides). The white racial group has been divided into Hispanic and non-Hispanic in this tabulation. It can be seen that the white non-Hispanic group was involved in 58% of all suicides but in 74% of all suicides by firearms. Thirty-eight percent of suicide deaths in Blacks were due to drugs and 50% of suicidal deaths in white Hispanics were the result of hanging.

Age Distribution (Table XXIII, page 44, Table XXIV, page 45 and Figure 20, page 45)

There were no deaths by suicide in the 13-16 year age group during this fiscal year. The 40-49 year age group had the highest number of suicides of any age group with deaths from drug overdoses and firearms constituting more than 50% of the total. Of special interest is the fact that the number of suicides in the 50-69 year age group decreased by 63%, from 27 in 1997-98 to 10 in 1998-99. There have not been these few cases in at least the last 14 fiscal years in this age group.

Distribution by Sex (Table XXV, page 46)

Males were more likely than females to commit suicide in 1998-99 (79% male, 21% female).

SUICIDES

Suicides are self-inflicted deaths. In San Francisco, the 90 suicides which are being tabulated account for 5.6% of the Medical Examiner death investigations for the fiscal year of 1998-99.

SUICIDE METHODS

IN FISCAL YEAR 1998-99

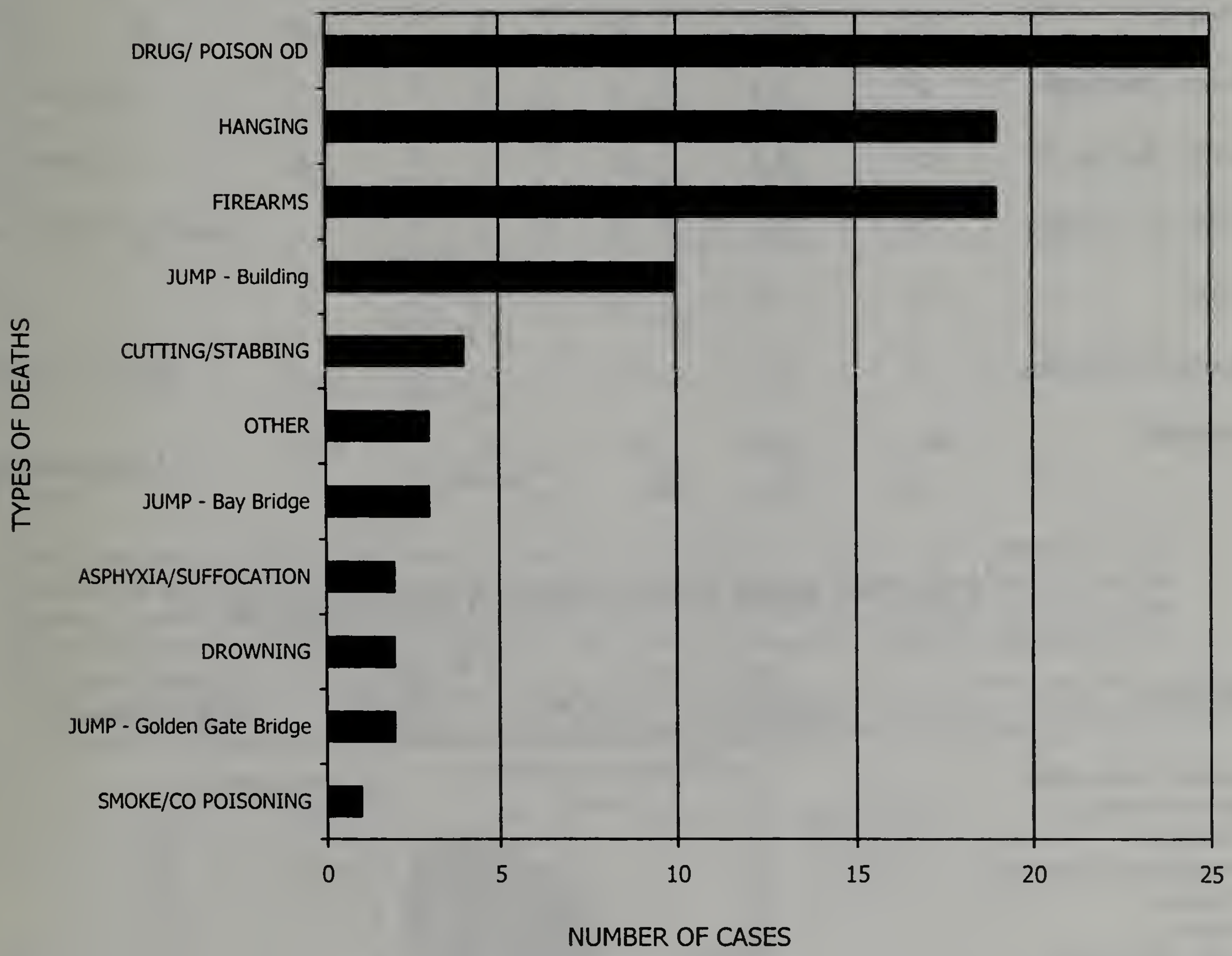


Figure 18.

TABLE XX. SUIDICAL DEATHS BY MODE

Abuse Drug and Alcohol Involvement

Method	Number	% Of Total Suicides	% With Alcohol	# Positive (# Tested)	Ave. Alc. Conc. (g%)	% W/ Abuse Drugs	# Positiv (# Tested
Asphyxia/Suffocation	2	2.2	0	0 (of 1)	-	0	0 (of 1)
Cutting/Stabbing	4	4.4	0	0 (of 3)	-	0	0 (of 2)
Drowning	2	2.2	50	1 (of 2)	0.03	0	0 (of 2)
Drug/Poison OD	25	27.8	33	8 (of 24)	0.18	0	0 (of 24)
Firearms	19	21.1	41	7 (of 17)	0.14	7	1 (of 15)
Hanging	19	21.1	28	5 (of 18)	0.14	28	5 (of 18)
Jump - Bay Bridge	3	3.3	0	0 (of 3)	-	0	0 (of 3)
Jump - Building	10	11.1	14	1 (of 7)	0.04	0	0 (of 7)
Jump - G. G. Bridge	2	2.2	0	0 (of 2)	-	0	0 (of 1)
Other	3	3.3	0	0 (of 2)	-	0	0 (of 2)
Smoke/CO Poisoning	1	1.1	100	1 (of 1)	0.11	100	1 (of 1)
TOTALS	**90**	**100**	**29**	**23** **(of 80)**	**0.14**	**13**	**7** **(of 54)**

TABLE XXI. ABUSE DRUGS PRESENT IN SUICIDAL DEATHS

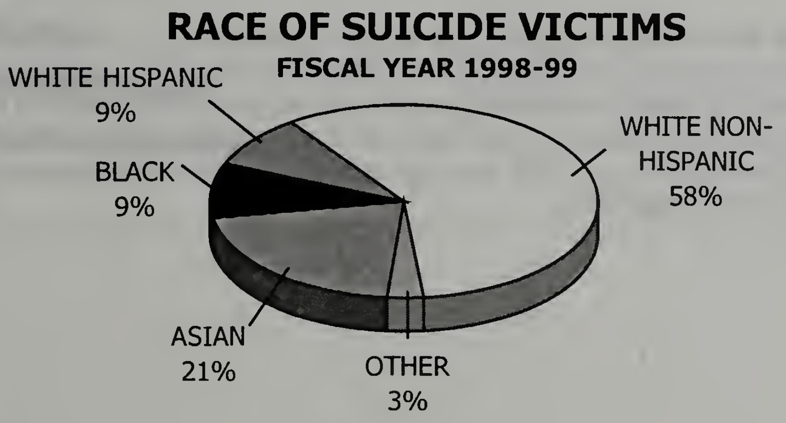
Drugs

Situation	Cocaine	PCP	Heroin	Amphetamines
Asphyxia/Suffocation	0	0	0	0
Cutting/Stabbing	0	0	0	0
Drowning	0	0	0	0
Drug/Poison Overdose	0	0	0	0
Firearms	0	0	0	1
Hanging	4	1	1	0
Jump - Bay Bridge	0	0	0	0
Jump - Building	0	0	0	0
Jump - Golden Gate Bridge	0	0	0	0
Other	0	0	0	0
Smoke/CO Poisoning	0	0	0	1
TOTALS	**4**	**1**	**1**	**2**

TABLE XXII. SUICIDE METHODS BY RACE

	Race					
Method	**W-NH**	**W-H**	**B-NH**	**ASIAN**	**OTHER**	**TOTALS**
Asphyxia/Suffocation	1 (50%)	0	0	1 (50%)	0	**2**
Cutting/Stabbing	0	0	1 (25%)	3 (75%)	0	**4**
Drowning	2 (100%)	0	0	0	0	**2**
Drug/Poison Overdose	16 (64%)	3 (12%)	3 (12%)	2 (8%)	1 (4%)	**25**
Firearms	14 (74%)	0	1 (5%)	3 (16%)	1 (5%)	**19**
Hanging	10 (53%)	4 (21%)	0	4 (21%)	1 (5%)	**19**
Jump - Bay Bridge	0	1 (33%)	1 (33%)	1 (33%)	0	**3**
Jump - Building	4 (40%)	0	1 (10%)	5 (50%)	0	**10**
Jump - Golden Gate Bridge	2 (100%)	0	0	0	0	**2**
Other	2 (67%)	0	1 (33%)	0	0	**3**
Smoke/CO Poisoning	1 (100%)	0	0	0	0	**1**
TOTAL NUMBER **% OF TOTALS**	**52** **(58%)**	**8** **(9%)**	**8** **(9%)**	**19** **(21%)**	**3** **(3%)**	**90**

NOTE: Row percentages refer to percentages by race for each method. These can be compared to total percentages for each race to see whether a method is more or less prevalent in a racial group. For instance, suicides by cutting/stabbing appear to occur *more* frequently in Asians (75%) than the general involvement of Asians in suicides (21%), and deaths by firearms in white non-Hispanics (74%) occur *more* frequently than all suicides in white non-Hispanics (58%).


RACE OF SUICIDE VICTIMS

FISCAL YEAR 1998-99

Figure 19.

TABLE XXIII. SUICIDE METHODS BY AGE

Age Range - Years

Method	13-16	17-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	9
Asphyxia/Suffocation	0	0	0	1 (50%)	0	0	0	1 (50%)	0	
Cutting/Stabbing	0	0	0	0	1 (25%)	2 (50%)	0	0	1 (25%)	
Drowning	0	0	1 (50%)	0	0	0	0	1 (50%)	0	
Drug/Poison Overdose	0	1 (4%)	2 (8%)	7 (28%)	8 (32%)	3 (12%)	2 (8%)	1 (4%)	1 (4%)	
Firearms	0	1 (5%)	3 (16%)	3 (16%)	8 (42%)	1 (5%)	0	1 (5%)	2 (11%)	
Hanging	0	0	7 (37%)	4 (21%)	2 (11%)	0	2 (11%)	2 (11%)	1 (5%)	(5
Jump - Bay Bridge	0	0	1 (33%)	1 (33%)	1 (33%)	0	0	0	0	
Jump - Building	0	0	3 (30%)	0	3 (30%)	0	0	1 (10%)	3 (30%)	
Jump – G. G. Bridge	0	0	0	1 (50%)	1 (50%)	0	0	0	0	
Other	0	0	1 (33%)	1 (33%)	1 (33%)	0	0	0	0	
Smoke/CO Poisoning	0	0	0	1 (100%)	0	0	0	0	0	
TOTAL NUMBER **% OF TOTAL**	**0** **(0%)**	**2** **(2%)**	**18** **(20%)**	**19** **(21%)**	**25** **(28%)**	**6** **(7%)**	**4** **(4%)**	**7** **(8%)**	**8** **(9%)**	**(1**

NOTE: Row percents refer to percentage by age range for each method. These can be compared to total percentages for each age range to see if a method is more or less prevalent in an age group. For example, death by jumps from buildings appears to occur *more* frequently in the 80-89 years of age group (30%) than the general involvement of this age group in suicides (9%), while deaths by drug/poison overdose in the 20-29 year age group (8%) occur *less* frequently than suicides by all means in this age group (20%).

SUICIDES

TABLE XXIV. AGE RANGES - COMPARISON BY YEAR*

Age Range Years	'89-'90	'90-'91	'91-'92	'92-'93	'93-'94	'94-'95	'95-'96	'96-'97	'97-'98	'98-'99
0 - 19	1	2	6	2	5	3	5	6	3	2
20 - 29	18	20	28	14	30	18	21	22	14	18
30 - 39	39	37	34	32	31	29	27	28	22	19
40 - 49	30	23	30	36	20	27	39	35	24	25
50 - 59	12	29	14	13	23	18	29	11	12	6
60 - 69	11	15	12	12	12	11	13	7	15	4
70 - 79	6	19	17	14	7	9	14	16	8	7
80 - 89	7	8	9	8	7	7	7	9	7	8
90 - 99	4	1	3	1	1	2	1	5	6	1
Unknown	0	0	0	0	0	0	0	0	0	0
TOTALS	**128**	**154**	**153**	**132**	**136**	**124**	**156**	**139**	**111**	**90**

* Totals do not include vehicular deaths ruled to be suicide.

SUICIDE VICTIMS BY AGE

FISCAL YEAR 1998-99

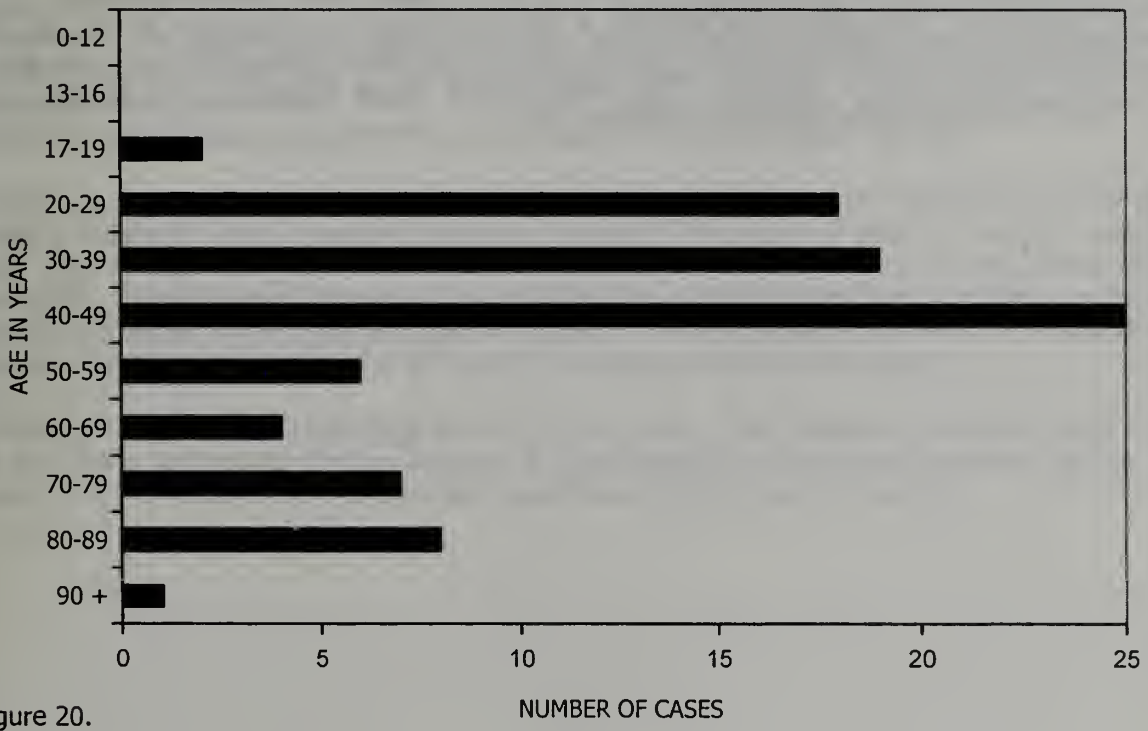


Figure 20.

TABLE XXV. SUICIDE METHODS BY SEX

	Sex	
Method	**Male**	**Female**
Asphyxia/Suffocation	1 (50%)	1 (50%)
Cutting/Stabbing	3 (75%)	1 (25%)
Drowning	1 (50%)	1 (50%)
Drug/Poison Overdose	20 (80%)	5 (20%)
Firearms	16 (84%)	3 (16%)
Hanging	17 (89%)	2 (11%)
Jump - Bay Bridge	2 (67%)	1 (33%)
Jump - Building	8 (80%)	2 (20%)
Jump - Golden Gate Bridge	1 (50%)	1 (50%)
Jump - Other	1 (33%)	2 (67%)
Smoke / CO Poisoning	1 (100%)	0 (0%)
TOTALS	**71 (79%)**	**19 (21%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths by hanging appear to occur *more* frequently in males (89%) than the general involvement of males in suicides (79%), while females die by suffocation and drowning *more* frequently (50%) than all suicides in females (21%).

HOMICIDE

Homicide is the killing of one human being by another. Murder is the unlawful killing of a human being with malice. The following data do not differentiate homicide as to whether it was justifiable, accidental, or murder. Such distinctions are the proper function of the judicial system and are not the responsibility or function of this office.

Any judicial system which deals with crimes involving death requires a well-trained staff and well-equipped Medical Examiner's Office which can and will interpret forensic findings in an unbiased, fair manner. Their investigation must be intense, accurate and rapid enough so that charges may be pursued or dismissed without unfairly affecting an individual's constitutional rights. That is the purpose of this office.

The proper evaluation and investigation of a homicide begins, naturally, at the scene. In the majority of cases, a staff member of this office (either the Investigator, Medical Examiner's Administrator, or Medical Examiner), determines whether a death is potentially a homicide. It has been well-documented that if such a determination is made by an individual inexperienced or untrained in death investigation, his opinion will be wrong in 50% of the cases. Such a person is very apt to miss the subtle homicide and is more inclined to miscall a natural or accidental death as homicide, resulting in false arrest, false accusations, needless expenditure of public funds, waste of investigative time, and delay in the investigation of other deaths.

The Investigator responds to the scene of death and determines whether the Police Homicide Detail will be called. When homicide is obvious, the Investigator responds as part of a team (other members include homicide investigators, photographers and criminologists). This office is responsible for the body, identification, inquiry into circumstances, manner and means of death (Gov. Code 27491.2). In addition to the scene investigation, the Investigator is responsible for recovering property, locating and notifying next of kin, and preparing a written summary of his/her investigation.

In about one-third to one-half of all homicides, a forensic pathologist will respond to the scene to aid in the investigation. The subsequent autopsy may also use photography, fluoroscopy, X-ray, angiography and other techniques to establish and define the number, nature and severity of wounds, to obtain evidence (i.e., bullets) and to prepare an official report. This report, including chemistry, serology and toxicology results, is used as part of the prosecution or defense of the case in the formal judicial hearing.

Pertaining to criminal trial, our judicial system requires identification of an individual and presentation of evidence, usually by virtue of expert testimony, relative to the cause of death or trauma associated with death. The Medical Examiner's Office identifies the body, frequently relying on local police, CII, or FBI fingerprints. Expert forensic testimony is given by the Forensic Pathologist from this office. In addition, the Forensic Toxicologist is frequently called upon to testify on the significance and effect of various drug levels, a matter of great importance when dealing with the concept of diminished capacity.

Of minor, but increasing importance, is the fact we are seeing more homicide and trauma cases transferred into the County for medical therapy because of San Francisco's excellent and advanced medical facilities. Should these individuals die, the autopsy and court testimony are done by this office.

HOMICIDE DEATHS

Sixty-Eight (68) deaths were ruled to have been due to homicide during the 1998-99 fiscal year. Of these, 9 were vehicular homicides and have been discussed in the "Vehicular Deaths" section. The remaining 59 homicide deaths are the basis for the tabulations in this section. The numbers of individuals dying by each manner of death are indicated in Figure 21, page 49 and Table XXVI, page 50; percentages of all homicides represented by specific methods are indicated in Table XXVI, page 50. The total number of non-vehicular homicides decreased by 21% from 75 in 1997-98 to 59 in 1998-99. The number of homicide deaths by firearms decreased 24%, from 46 to 35! Of the homicide victims tested for alcohol and drugs (those in the hospital for less than 24 hours), more than one-third had positive blood alcohol levels; one-third had drugs present. The percent of homicide victims with positive blood tests for drugs varied with the method of homicide with 40% of those dying by firearms having drugs present.

Abuse Drug Involvement (Table XXVII, page 50)

Cocaine was the abuse drug seen most frequently in homicide victims, being present in 16 homicide cases as compared to 27 such cases in 1997-98, a decrease of 41%. Cocaine was associated most strongly with deaths by gunshot wound, with 12 of the 16 cases with cocaine present (75%) being deaths due to gunshot wounds. Stabbing was the homicide method which was associated with drugs next most frequently. Overall, the number of times abuse drugs were found to be present in homicide cases decreased 40% from 37 in 1997-98 to 22 in 1998-99.

Racial Distribution (Table XXVIII and Figure 22, page 51)

Deaths by homicide occurred more frequently in blacks (51%) than in whites (28%), a reversal from 1997-98. Deaths resulting from firearms accounted for 75% of all homicides in Asians, 73% of homicides in blacks and 29% of homicides in whites.

Age Distribution (Figure 23, page 52, Tables XXIX and XXX, page 53 and Table XXXII, page 54)

There were 5 homicides in the 0-19 year age group, a decrease of 38% from 1997-98 and the lowest number in the last twelve fiscal years. The number of homicide deaths in the 20-39 year age group decreased 39% from 1997-98 and is the lowest number in this age group in the last twelve fiscal years. Death by firearms accounted for 68% of the homicides in the 0-39 year age group in 1998-99. In the previous fiscal year, firearm deaths accounted for 82% of homicides in this age group. The peak occurrence of deaths due to firearms was in the 20-29 year age group. As can be seen from Table XXXII, the mean age of homicide victims varies with the mode, with the lowest mean age for males being in deaths by firearms and for females in deaths by stabbing.

Distribution by Sex (Table XXXI, page 54)

Males were almost 4 times as likely as females to be homicide victims.

NON-VEHICULAR HOMICIDES

Homicides are those deaths caused by another person, generally resulting in murder and manslaughter charges. In San Francisco, 59 non-vehicular homicides occurred in 1998-99, accounting for 4.2% of the total Medical Examiner investigations.

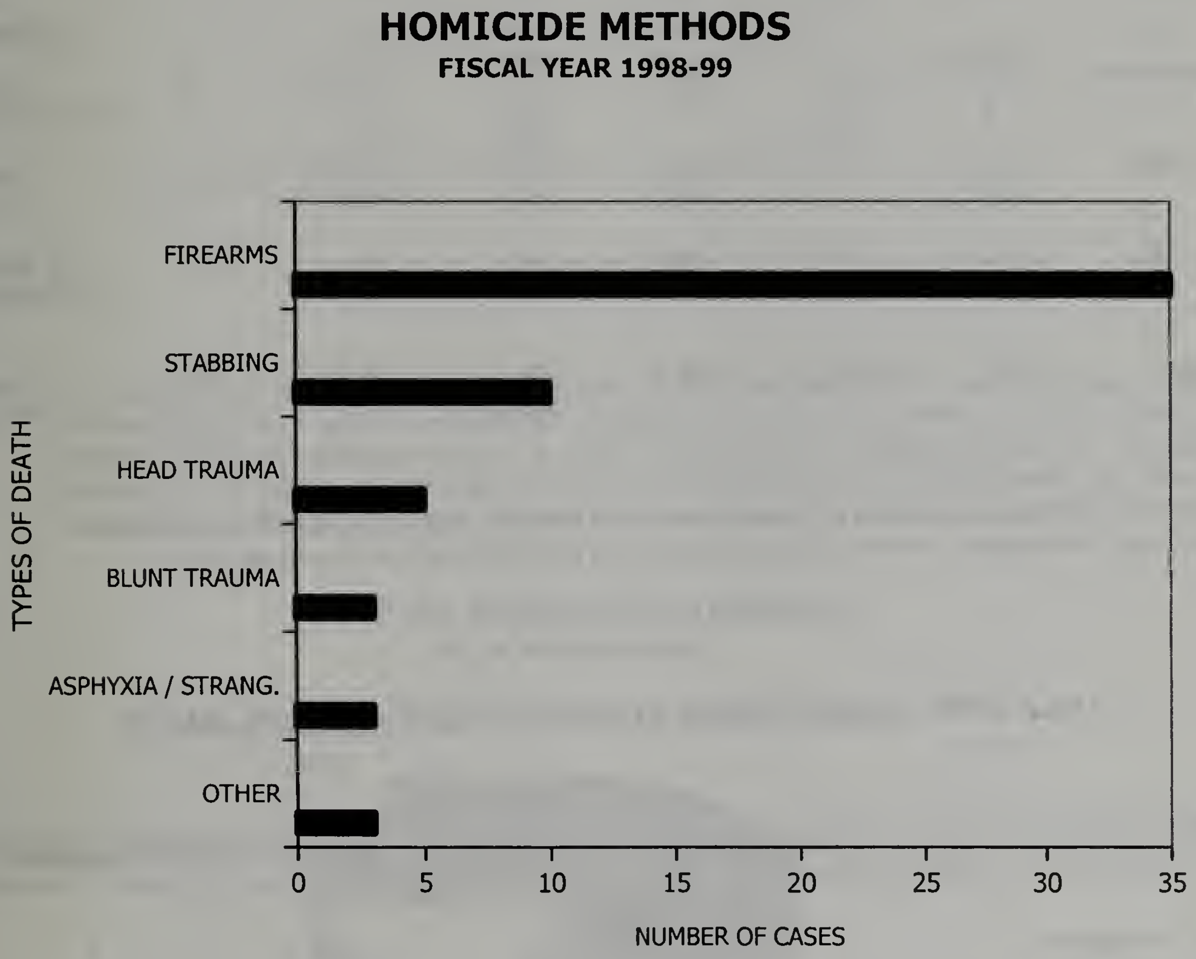


Figure 21.

TABLE XXVI. HOMICIDE DEATHS BY MODE

Abuse Drug and Alcohol Involvement

Method	Number	% Of Total Homicides	% With Alcohol *	# Positive (# Tested)	Ave. Alcohol Conc. (g%)	% With Drugs **	# Positive (# Tested)
Firearms	35	59	34	12 (of 35)	0.11	40	14 (of 35)
Stabbing	10	17	60	6 (of 10)	0.14	33	3 (of 9)
Blunt Trauma	3	5	0	0 (of 3)	-	33	1 (of 3)
Asphyxia/Strang.	3	5	33	1 (of 3)	0.27	0	0 (of 3)
Head Trauma	5	8	33	1 (of 3)	0.35	0	0 (of 3)
Other	3	5	0	0 (of 2)	-	0	0 (of 2)
TOTALS	**59**	**100**	**36**	**20** **(of 56)**	**0.14**	**33**	**18** **(of 55)**

* Refers to percentage of victims (of those tested) with positive blood ethyl alcohol concentrations.
** Refers to percentage of victims (of those tested) with positive blood tests for abuse drugs.

TABLE XXVII. DRUGS PRESENT IN NON-VEHICULAR HOMICIDE DEATHS

Drugs

Situation	Cocaine	PCP	Heroin	Amphetamines
Asphyxia/Strangulation	0	0	0	0
Traumatic Injuries	1	0	1	0
Gunshot Wound	12	0	1	4
Stabbing	3	0	0	0
Head Injury	0	0	0	0
Other	0	0	0	0
TOTALS	**16**	**0**	**2**	**4**

TABLE XXVIII. HOMICIDE METHODS BY RACE

Method	W-NH	W-H	B-NH	Asian	Other	TOTAL
	Race					
Asphyxia/Strangulation	2 (67%)	1 (33%)	0	0	0	**3**
Head Trauma	2 (40%)	0	2 (40%)	1 (20%)	0	**5**
Firearms	3 (9%)	2 (6%)	22 (63%)	6 (17%)	2 (6%)	**35**
Stabbing	3 (30%)	1 (10%)	5 (50%)	0	1 (10%)	**10**
Blunt Trauma	1 (33%)	1 (33%)	0	1 (33%)	0	**3**
Other	1 (33%)	0	1 (33%)	0	1 (33%)	**3**
TOTALS	**12**	**5**	**30**	**8**	**4**	**59**
% OF TOTAL	**20%**	**8%**	**51%**	**14%**	**7%**	

NOTE: Row percentages refer to percentages by race for each method. These can be compared to total percentages for each race to see whether a method is more or less prevalent in a racial group. For instance, death by stabbing appears to occur *less* frequently in Asians (0%) than the general involvement of Asians in homicides (14%) while deaths due to firearms appear to occur *less* frequently in white non-Hispanics (9%) than all homicides in white non-Hispanics (20%).

RACE OF HOMICIDE VICTIMS
FICAL YEAR 1998-99

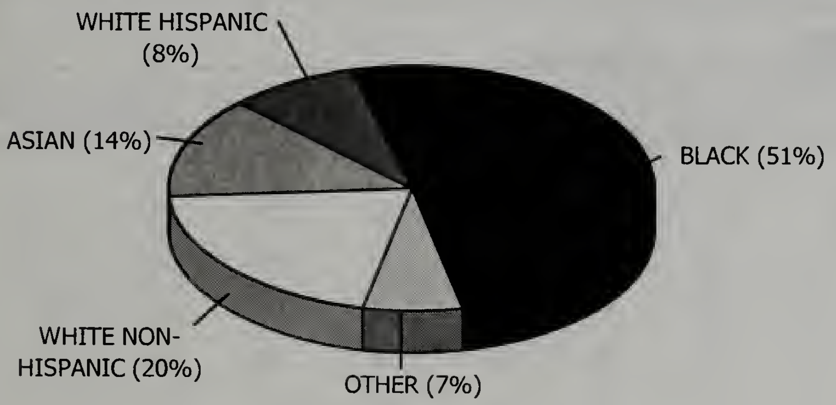


Figure 22.

HOMICIDE VICTIMS BY AGE
FISCAL YEAR 1998-99

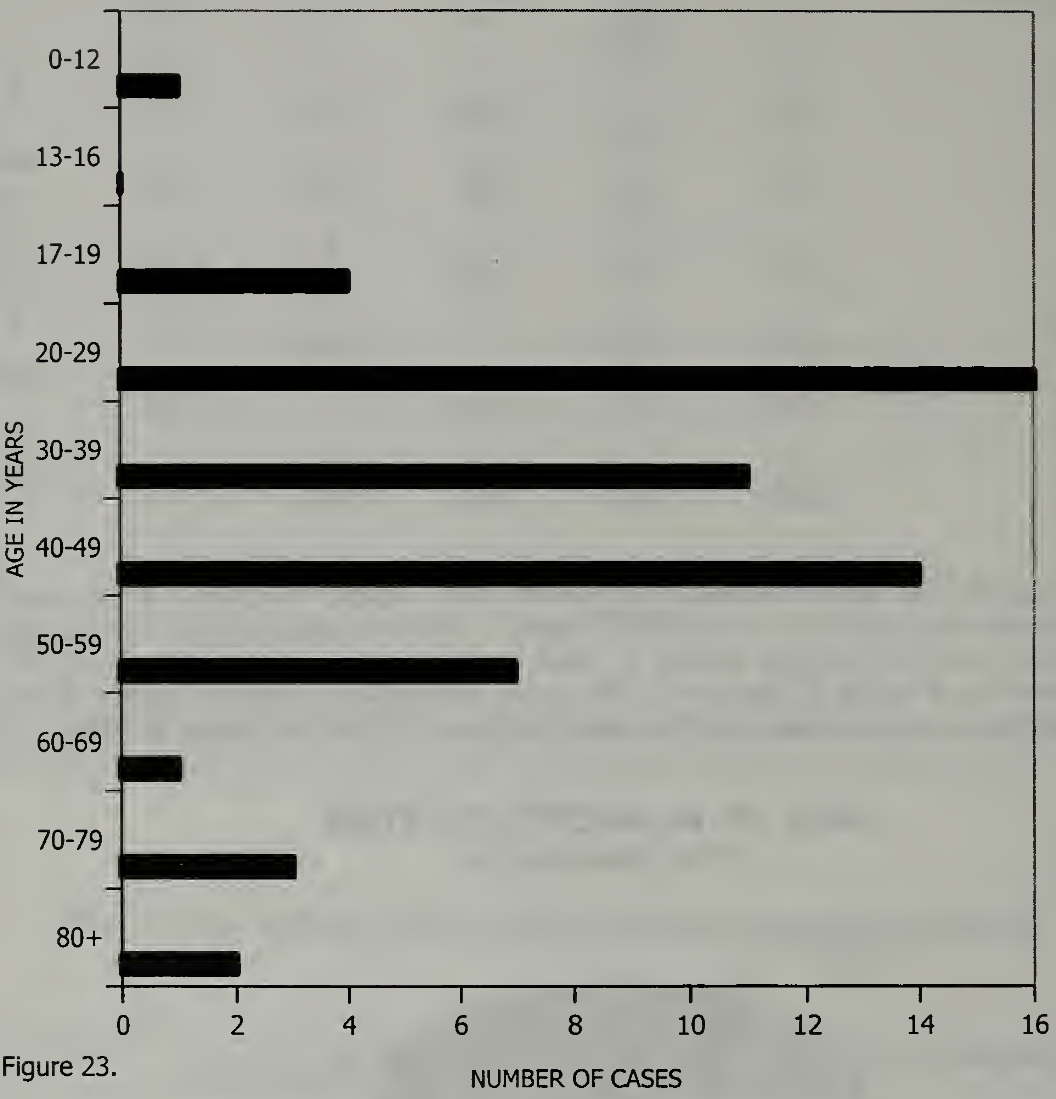


Figure 23.

TABLE XXIX. HOMICIDE METHODS BY AGE

Age Range - Years

Method	0-12	13-16	17-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Unk
Asphyxia/ Strangulation	0	0	0	1 (33%)	1 (33%)	0	0	0	1 (33%)	0	0
Head Trauma	0	0	0	1 (20%)	0	2 (40%)	1 (20%)	0	1 (20%)	0	0
Firearms	0	0	4 (11%)	13 (37%)	7 (20%)	6 (17%)	4 (11%)	0	0	1 (3%)	0
Blunt Trauma	0	0	0	0	1 (33%)	0	0	0	1 (33%)	1 (33%)	0
Stabbing	0	0	0	1 (10%)	2 (20%)	5 (50%)	2 (20%)	0	0	0	0
Other	1 (33%)	0	0	0	0	1 (33%)	0	1 (33%)	0	0	0
TOTALS	**1**	**0**	**4**	**16**	**11**	**14**	**7**	**1**	**3**	**2**	**0**
% OF TOTALS	**(2%)**	**(0%)**	**(7%)**	**(27%)**	**(19%)**	**(24%)**	**(12%)**	**(2%)**	**(5%)**	**(3%)**	

NOTE: Row percents refer to percentage by age range for each method. These can be compared to total percentages for each age range to see if a method is more or less prevalent in an age group. For example, deaths by firearms occur *more* frequently in the 20-29 year age group (37%) than the general involvement of this age group in homicides (27%) while deaths by stabbing occur *less* frequently in the 20-29 year age group (10%) than all homicides in this age group (27%).

TABLE XXX. HOMICIDE VICTIMS AGE RANGES COMPARISON BY YEAR

Fiscal Year

Age Range Years	'89-'90	'90-'91	'91-'92	'92-'93	'93-'94	'94-'95	'95-'96	'96-'97	'97-'98	'98-'99
0-19	16	13	19	16	11	18	8	5	8	5
20-29	28	37	39	49	53	34	32	22	29	16
30-39	28	27	32	25	26	23	32	18	15	11
40-49	15	12	17	14	12	12	11	9	12	14
50-59	6	5	10	13	8	4	6	5	6	7
60-69	5	5	0	3	4	2	4	2	3	1
70+	6	5	6	7	4	0	5	2	2	5

TABLE XXXI. HOMICIDE METHODS BY SEX

Method	Sex Male		Female	
Asphyxia/Strangulation	1	(33%)	2	(67%)
Head Trauma	4	(80%)	1	(20%)
Firearms	31	(89%)	4	(11%)
Blunt Injury	1	(33%)	2	(67%)
Stabbing	7	(70%)	3	(30%)
Other	3	(100%)	0	(0%)
TOTALS	**47**	**(80%)**	**12**	**(20%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths by stabbing occur *more* frequently in females (30%) than the general involvement of females in homicides (20%), while deaths by firearms in males (89%) occur *more* frequently than all homicides in males (80%).

TABLE XXXII. MEAN AGE FOR HOMICIDE VICTIMS BY METHOD AND SEX

(Age in Years)

Method	Male	Female
Asphyxia/Strangulation	34	47
Head Trauma	45	74
Firearms	33	47
Blunt Trauma	73	62
Stabbing	40	45
Other	41	-

The lowest mean age for **males** was seen in deaths by firearms.
The lowest mean age for **females** was seen in death by stabbing.

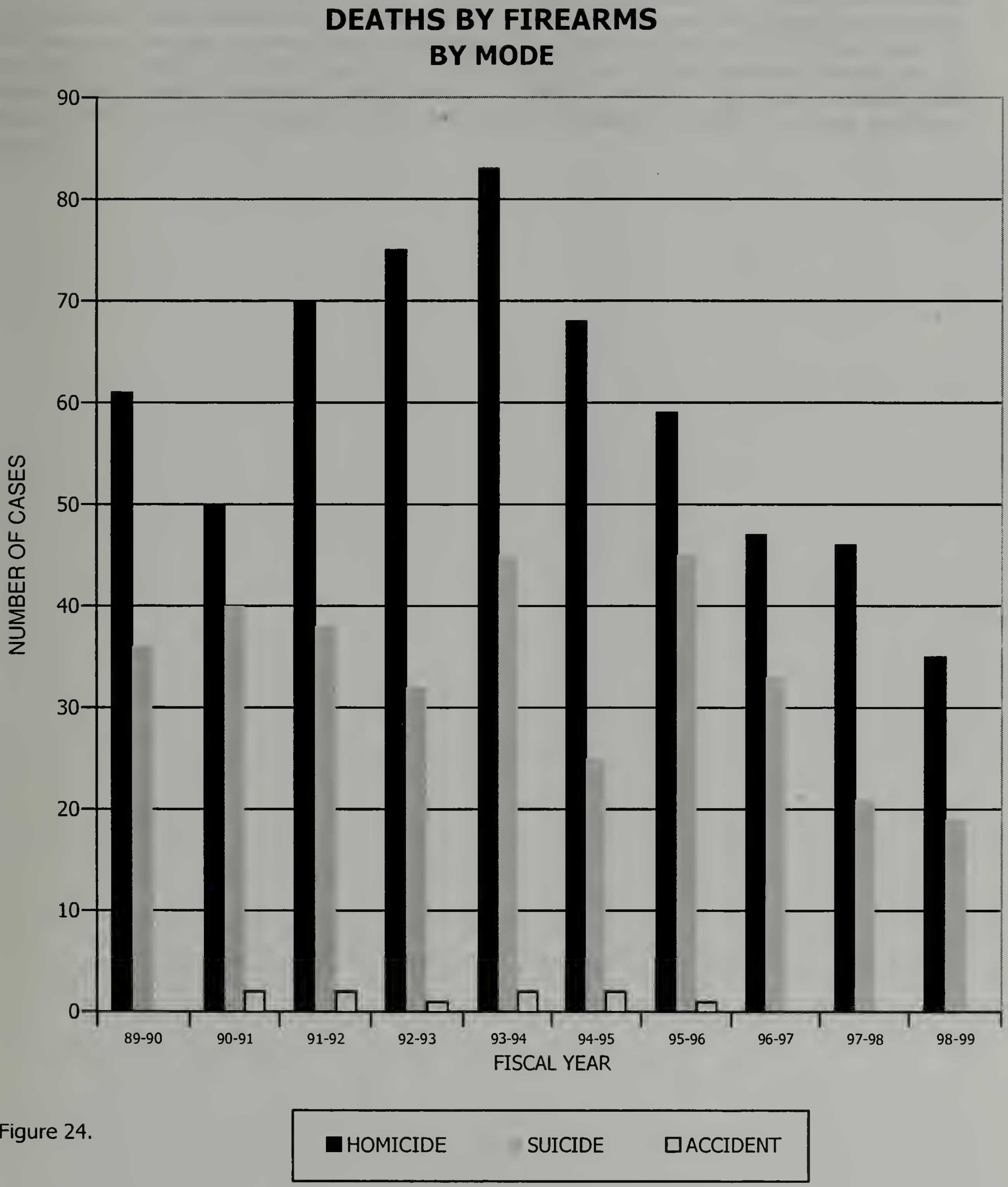

DEATHS BY FIREARMS
BY MODE
NUMBER OF CASES
90
80
70
60
50
40
30
20
10
0
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
FISCAL YEAR
■ HOMICIDE
SUICIDE
□ ACCIDENT

Figure 24.

PATHOLOGY

In the **Pathology Department**, tissue and body fluid samples taken at autopsy are prepared for microscopic study, histochemically stained, or analyzed for chemical constituents. Cardiac pacemakers or other mechanical life-support devices are examined for any defect. Smears or "wet-mounts" are examined for spermatozoa, bacteria, or tuberculosis. Bacteriologic cultures may be taken. However, if pathogens are grown, they are usually sent to the Department of Public Health (State or local) for further identification. If indicated, "soft" X-rays or histochemical tests are done to establish entrance or exit gunshot wounds. New research techniques, such as methods of obtaining fingerprints from the skin of a victim, are developed here also.

MONTHLY FIGURES

Fiscal Year 1998-1999

PATHOLOGY*

Year	Total Med. Exam Cases	Cases Referred to Pathologist	No. of Organs Submitted	No. of Sections Taken	Histo-Pathologic Slides Made	Special Stains **	Serology ***	Other Determi-nations ****	Blo Draw ***
1998									
July	128	71	414	722	386	103	56	2,048	
Aug.	102	58	354	677	382	44	70	1,947	9
Sept.	116	70	404	736	436	17	21	104	9
Oct.	168	96	577	1,091	480	90	42	99	6
Nov.	136	105	547	1,046	528	29	57	2,814	6
Dec.	148	82	580	1,114	555	21	56	117	5
1999									
Jan.	172	85	706	1,340	613	35	66	135	7
Feb.	126	56	539	1,098	564	69	56	75	4
Mar.	128	75	487	1,061	596	72	17	111	6
April	125	73	490	1,045	579	57	7	69	4
May	152	72	400	796	513	26	22	2,319	3
June	120	72	526	991	605	16	52	114	3
TOTALS	**1,621**	**915**	**6,024**	**11,717**	**6,237**	**579**	**522**	**9,952**	**67**

* These figures do not reflect photography, forensic radiology, or material prepared for teaching forensic pat

** Includes smears examined for bacteria and spermatozoa

*** ABO and Anti-Rh typing, Reverse grouping, Anti Lewis a, and Anti Lewis b typing

**** Blood, Urine, Water, evidence for: Hematology, Biochemistry, Urinalysis, Bacteriology, "Sickledex"

***** Includes all Blood drawing, Saliva sampling, Fingerprinting, and Urine sampling

TOXICOLOGY

Toxicology is the study of the interaction of foreign compounds, such as drugs, with living organisms (e.g. people). It involves knowing something of the nature of that interaction, how the foreign compounds break down (that is, how they are metabolized), and what effects they have on the health and behavior of the organism.

All of this information is vital to the role that toxicology plays in determining the cause of death, as well as in evaluating the significance of chemicals found in the living.

Generated within the Toxicology Department is information on samples from Medical Examiner's cases as well as from suspects in criminal cases (e.g. homicides, driving under the influence, probation failure, (H & S 11550), assaults) and other persons to be tested at the request of various law enforcement agencies. The data obtained in these cases enable the toxicologist to assist in interpreting the behavior of the suspects involved, to advise the District Attorney, the Public Defender, the City Attorney, Police Department, the California Highway Patrol, and other agencies, and to give expert testimony in court as necessary in such cases as to the effect of drugs in the case. This application of toxicological facts to legal problems is Forensic Toxicology.

The Toxicology Department also performs analyses on samples submitted by the Police and Fire Departments in connection with the recruitment programs and other personnel requirements. The results in some cases are presented to the respective commission in official hearings.

Toxicological facts are determined through tests performed on biological samples (e.g. blood, urine, gastric contents, liver, etc.) taken at the time of autopsy or from living persons. The samples are subjected to a series of chemical manipulations designed to extract any drugs or other physiologically active compounds that may be present. The subsequent extracts are then examined by equipment set up to detect, accurately identify, and quantitate any materials that may be present. These determinations must be of unquestionable accuracy and as specific as scientifically possible, and they must be able to stand up to review by any other qualified laboratory in the nation.

The analytical methods most commonly used in the toxicological studies are gas and thin layer chromatography; ultraviolet, visible, and fluorescence spectrophotometry; and immunoassay techniques. Advanced techniques, such as mass spectrometry and HPLC (High Performance Liquid Chromatography) are used as necessary for confirmation of difficult samples. These precise and sophisticated methods require the use of advanced laboratory apparatus and highly trained personnel.

Levels of drugs in two or more body compartments (one of which is invariably blood) are routinely determined in order to answer the question of whether the drug use is acute or chronic. This approach is of the utmost importance in determining the time of ingestion and whether or not the intent of the ingestion was suicide.

The range of drugs available to the public is extremely wide, and the nature and type of compounds involved are highly variable. The methodologies necessary to conduct toxicological analyses have to be similarly wide-ranging and also continually expanded in order to keep up with the manufacture of new drugs, both legal and illegal. This is an important aspect of the Toxicology Department's work, often requiring extensive research. So, too, does the identification of "street-manufactured" compounds which are sometimes found in postmortem samples. Also, with many drugs being compounded to have physiologic effects at very low doses, detection in body fluids is often extremely difficult.

The most common drugs in the community are alcohol and prescription items. However, illegal, or "street", drugs (especially morphine-type alkaloids [e.g. heroin], cocaine, and amphetamines) represent a very significant percentage of the compounds actually found in the cases presented to the Toxicology Department. Less commonly used drugs, industrial materials, certain gases, and various other foreign compounds have also been detected.

TOXICOLOGY - MEDICAL EXAMINER'S CASES
July 1998 - June 1999

Incidence of drugs and other physiologically active material detected

The compounds listed are not necessarily the cause of death nor even a contributing factor. They are the toxic agents that were **found to be present**, either singly *or* in combination, in Medical Examiner's cases.

ABUSE DRUGS	
Cocaine	149
Benzoylecgonine*	156
Morphine-type alkaloids	185
Codeine	135
Methamphetamine	41
Amphetamine	39
Phencyclidine (PCP)	3
GHB	3
MDMA (Ecstasy)	1
11-nor-delta-9-THC	1

ANALGESIC - NARCOTIC	
Methadone	35
Methadone Metabolite	35
Hydrocodone	14
Oxycodone	8
Propoxyphene (Darvon)	7
Norpropoxyphene	7
Meperidine (Demerol)	3
Fentanyl	3
Hydromorphone	1

ANALGESICS - NON-NARCOTIC	
Acetaminophen	10
Tramadol (Ultram)	5
Salicylates	2

CARDIAC DRUGS	
Lidocaine	59
Propranolol (Inderal)	3
Metoprolol	1
Atenolol	1
Mexilitine (Mexitil)	1

ANTI-DEPRESSANTS	
Nortriptyline (Aventyl)	24
Amitriptyline (Elavil)	17
Trazodone (Desyrel)	12
Fluoxetine (Prozac)	9
Paroxetine (Paxil)	9
Sertraline (Zoloft)	8
Doxepin (Sinequan)	7
Desipramine (Norpramin)	4
Imipramine (Tofranil)	2
Mirtazepine (Remeron)	2
Clomipramine (Anafranil)	1

SEDATIVE-HYPNOTIC - Barbiturates	
Phenobarbital	6
Pentobarbital	4
Butalbital	1

ANTIHISTAMINES	
Diphenhydramine (Benadryl)	38
Doxylamine	10
Chlorpheniramine	10
Promethazine (Phenergan)	4
Brompheniramine	4

DECONGESTANTS	
Phenylpropanolamine	3

BRONCHODILATORS	
Ephedrine	17

* Benzoylecgonine is not a drug of abuse. It is a metabolite of cocaine and is generally present when cocaine is detected. In some cases, benzoylecgonine, but not cocaine, was found which indicated that there had been some exposure to cocaine.

TOXICOLOGY - MEDICAL EXAMINER'S CASES

July 1998 - June 1999

Drugs Detected, Continued

ANTICONVULSANTS	
Diphenylhydantoin (Dilantin)	6
Carbamazepine (Tegretol)	5
Valproic Acid	5

ANTIPSYCHOTIC AGENTS	
Thioridazine (Mellaril)	3
Chlorpromazine (Thorazine)	1

MISCELLANEOUS	
Olanzepine (Zyprexa)	10
Carbon Monoxide	9
Quinine	8
Acetone	6
Carisoprodol	3
Isopropyl Alcohol	2
Ketamine	2
Cyanide	2
Ibuprofen	2
Ambien (Zolpidem)	2
Phentermine	1
Magnesium	1
Methemoglobin	1
Primidone	1
Theophylline	1
Warfarin (Coumadin)	1

ANTI-ANXIETY AGENTS	
Nordiazepam	37
Diazepam (Valium)	30
Chlordiazepoxide (Librium)	12
Meprobamate	6
N-Desalkylflurazepam	4
Temazepam (Restoril)	3
Flurazepam (Dalmane)	2
Lorazepam	2
Clonazepam	1
Alprazolam (Xanax)	1

TOXICOLOGY CASES

July 1998 - June 1999

Year / Month	Medical Examiner	Forensic Toxicology*	Total Cases	Total Tests Performed
1998				
July - September	348	417	765	7,269
October - December	455	480	935	9,116
1999				
January - March	423	378	801	7,083
April - June	399	622	1,021	10,089
TOTALS	**1,625**	**1,897**	**3,522**	**33,557**

* Cases in which specimens were referred to the Medical Examiner's Toxicology Laboratory for forensic toxicological examination generally were criminal cases in which the presence of drugs was suspected either in the victim or suspect of the crime. DUI, 11550, management control, out-of-county and other miscellaneous cases are included in this tabulation.

ABUSE DRUGS

The role of abuse drugs in deaths during the 1998-99 fiscal year is presented in this section. The four abuse drugs most commonly seen in Medical Examiner's cases - cocaine, heroin, amphetamines and PCP - will be examined. The number of cases in which these drugs were found either alone or in combination with other abuse drugs are presented in Table XXXII, page 65. In drug-caused deaths, heroin was the most frequently observed drug of abuse where drugs were present alone and cocaine was the most frequently observed abuse drug when drugs were present in combination.

Distribution by Sex (Table XXXIV, page 66)

In deaths caused by abuse drugs (DC = drug caused), where the drugs were present either singly or in combination, 70-100% of the deceased individuals were males.

Distribution by Race (Table XXXIV, page 66)

White-Non-Hispanic (W-NH) - In drug-caused deaths where abuse drugs were present singly, the white non-Hispanic racial group predominated in deaths caused by heroin and amphetamines. In drug-caused deaths where abuse drugs were present in combination with other abuse drugs, the white non-Hispanic racial group predominant in deaths caused by all abuse drugs being studied except for deaths caused by PCP in combination.

Black/Non-Hispanic (B-NH) - In drug-caused deaths where abuse drugs were present singly, the black non-Hispanic racial group was not predominated in deaths caused by abuse drugs.

White-Hispanic (W-H) - This racial group was most heavily represented in drug caused deaths where cocaine was present alone and where heroin was present alone.

Distribution by Age (Table XXXIV, page 66)

The lowest mean age was seen in drug-related deaths with PCP present in combination with other drugs (30.0 years) while the highest mean age was seen in drug-caused deaths with amphetamines present alone (56.0 years).

Alcohol Involvement (Table XXXIV, page 66)

The presence of alcohol in the blood of abuse drug users (drugs present singly) was most often associated with deaths caused by heroin alone (61%) and was least associated with deaths caused by amphetamines alone (0%).

ABUSE DRUGS (Continued)

Deaths Involving Cocaine (Figure 25, page 67 and Tables XXXV and XXXVI, page 68)

Cocaine **alone** was the *cause* of death in 7 cases by overdose, as compared to 14 cases in 1997-98. Cocaine alone was also present in 24 *drug-related* deaths (See Table XXXV) including 4 ruled to be accidental, and 11 ruled to be by homicide. (In 1997-98, cocaine was present in 19 homicides.) Of the 24 *drug-related* deaths, 11 (46%) were due to gunshot or stabbing.

Cocaine **in combination** with other drugs was the *cause* of death in 87 cases by overdose, a 13% increase from 1997-98. Cocaine in combination was also present in 14 *drug-related* deaths (See Table XXXVI) including 2 cases ruled to be accidental, 1 case ruled to be by suicide, and 5 cases ruled to be by homicide. Of these 14 deaths, 4 (29%) were due to gunshot.

The number of deaths due to cocaine over the last 10 fiscal years is shown in Figure 25. It can be seen that the number of deaths due to cocaine decreased by 1 from 1997-98.

Deaths Involving Heroin (Figure 25, page 67 and Table XXXVII, page 70)

Heroin **alone** was the *cause* of death in 41 cases by overdose, an increase of 19 from the preceding fiscal year! Heroin alone also was present in 7 *drug-related* deaths. The involvement of heroin alone in *drug-related* deaths was very low as compared to the involvement of cocaine in this type of death, both in number and manners of death.

Heroin **in combination** with other drugs was the *cause* of death in 82 cases by overdose, a 13% decrease from the previous fiscal year total of 94 cases. Heroin in combination was present in 8 *drug-related* deaths, 1 (12%) of which was due to gunshot.

The numbers of deaths due to heroin over the last 25 fiscal years are shown in Figure 27, page 72. The number of such deaths for 1998-99 is the second highest during this period.

Deaths Involving Amphetamines (Figure 25, page 67 and Table XXXVIII, page 71)

Amphetamines **alone** were the *cause* of death in 3 cases by overdose as compared to 0 in 1997-98 and to 2 each in 1996-9 and 1995-96. Amphetamines *alone* were also present in 4 *drug-related* deaths, 1 of which (25%) was the result of gunshot.

Amphetamines **in combination** with other drugs were the *cause* of death in 14 cases by overdose, a decrease of 46% from the previous fiscal year. Amphetamines in combination with other drugs were present in 6 *drug-related* deaths, 3 of which (50%) were due to gunshot.

Abuse Drugs Present in Violent Deaths (See Figure 26, page 69)

Cocaine is the drug of abuse seen most frequently in deaths by homicide and suicide.

TABLE XXXIII. ABUSE DRUGS

Abuse Drugs Present Alone

Drug	Drug Caused Deaths*	Drug Related Deaths	Role Unclear	Incidental Findings
Cocaine alone	10	24	1	7
Heroin alone	46	7	0	2
Amphetamines alone	4	4	3	1
PCP alone	0	0	0	0

Abuse Drugs Present in Combination with Other Drugs

Drug	Drug Caused Deaths*	Drug Related Deaths	Role Unclear	Incidental Findings
Cocaine in combination	91	14	4	6
Heroin in combination	87	8	0	6
Amphetamines in combination	16	6	4	5
PCP in combination	2	1	0	0

*NOTE: Drug *caused* deaths are not all due to drug overdoses.

TABLE XXXIV. ABUSE DRUGS - INCIDENCE BY SEX, RACE, AGE, AND ALCOHOL INVOLVEMENT

Drugs Present Singly

Drug	SEX		RACE			Mean Age	% With Alcohol	# Positive (# Tested)	Ave. Alc. Conc. (g%)
	% M	% F	% W-NH	% W-H	%B-NH				
Cocaine - DC*	70	30	30	20	30	42.6	20	2 (of 10)	0.10
Cocaine - DR**	75	25	21	4	71	38.3	45	9 (of 20)	0.12
Heroin - DC*	83	17	74	17	7	42.3	61	25 (of 41)	0.19
Heroin - DR**	57	43	43	14	29	39.4	0	0 (of 2)	-
Amphet. - DC*	100	0	100	0	0	56.0	0	0 (of 4)	-
Amphet. -DR**	100	0	25	25	25	31.3	25	1 (of 4)	0.04
PCP - DC*	NONE								
PCP - DR**	NONE								

Drugs Present in Combination

Drug	SEX		RACE			Mean Age	% With Alcohol	# Positive (# Tested)	Ave. Alc. Conc. (g%)
	% M	% F	% W-NH	% W-H	%B-NH				
Cocaine - DC*	88	12	60	8	25	40.4	40	35 (of 87)	0.14
Cocaine - DR**	86	14	36	14	50	41.4	31	4 (of 13)	0.07
Heroin - DC*	89	11	62	7	25	39.1	35	28 (of 81)	0.14
Heroin - DR**	75	25	50	13	25	44.2	14	1 (of 7)	0.09
Amphet. - DC*	88	12	69	12	6	38.7	27	4 (of 15)	0.03
Amphet. -DR**	83	17	50	0	50	36.0	40	2 (of 5)	0.04
PCP+ - DC*	100	0	50	50	0	33.0	0	0 (of 2)	-
PCP+ - DR	100	0	0	100	0	30.0	0	0 (of 1)	-

* DC = Drug Caused ** DR = Drug Related

DEATHS DUE TO
AMPHETAMINES, COCAINE AND HEROIN
BY FISCAL YEAR

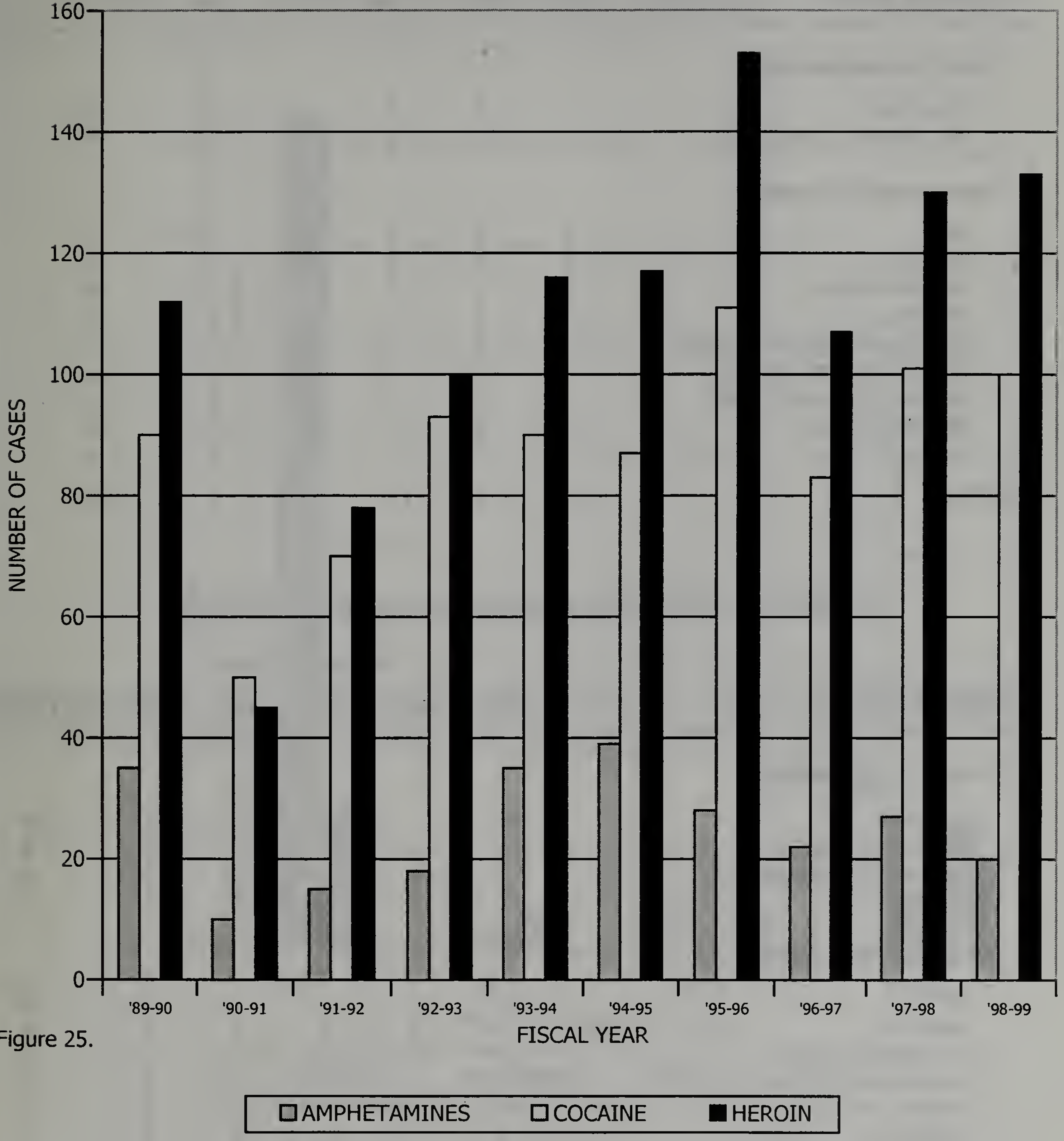


Figure 25.

DEATHS INVOLVING COCAINE

TABLE XXXV. COCAINE PRESENT ALONE

Manner of Death

CAUSE OF DEATH	ACC	SUI	HOM	NC	UND	TOTALS
Drug Caused Deaths						
Overdose	7	0	0	0	0	**7**
Intracerebral Hemorrhage	3	0	0	0	0	**3**
Drug Related Deaths						
Fall	1	0	0	0	0	**1**
Drowning	0	0	0	0	1	**1**
Gunshot Wound	0	0	8	0	0	**8**
Hanging	0	3	0	0	0	**3**
Hypertrophic Cardiomyopathy	0	0	0	1	0	**1**
Intracerebral Hemorrhage	0	0	0	4	0	**4**
Multiple Traumatic Injuries	1	0	0	0	0	**1**
Stabbing/Cutting	0	0	3	0	0	**3**
Vehicular	2	0	0	0	0	**2**
TOTALS	**14**	**3**	**11**	**5**	**1**	**34**

TABLE XXXV. COCAINE IN COMBINATION WITH OTHER DRUGS

Manner of Death

CAUSE OF DEATH	ACC	SUI	HOM	NC	UND	TOTALS
Drug Caused Deaths						
Overdose	85	0	0	0	2	**87**
Bronchopneumonia	1	0	0	0	0	**1**
Intracerebral Hemorrhage	1	0	0	0	0	**1**
Sepsis	1	0	0	0	0	**1**
Drug Related Deaths						
AIDS	0	0	0	2	0	**2**
Asphyxia	1	0	0	0	0	**1**
CO Poisoning (fire)	1	0	0	0	0	**1**
Endocarditis	0	0	0	1	0	**1**
Gunshot Wound	0	0	4	0	0	**4**
Hanging	0	1	0	0	0	**1**
Intracerebral Hemorrhage	0	0	0	2	0	**2**
Neck Injury	0	0	1	0	0	**1**
Ruptured Aortic Aneurysm	0	0	0	1	0	**1**
TOTALS	**90**	**1**	**5**	**6**	**2**	**104**

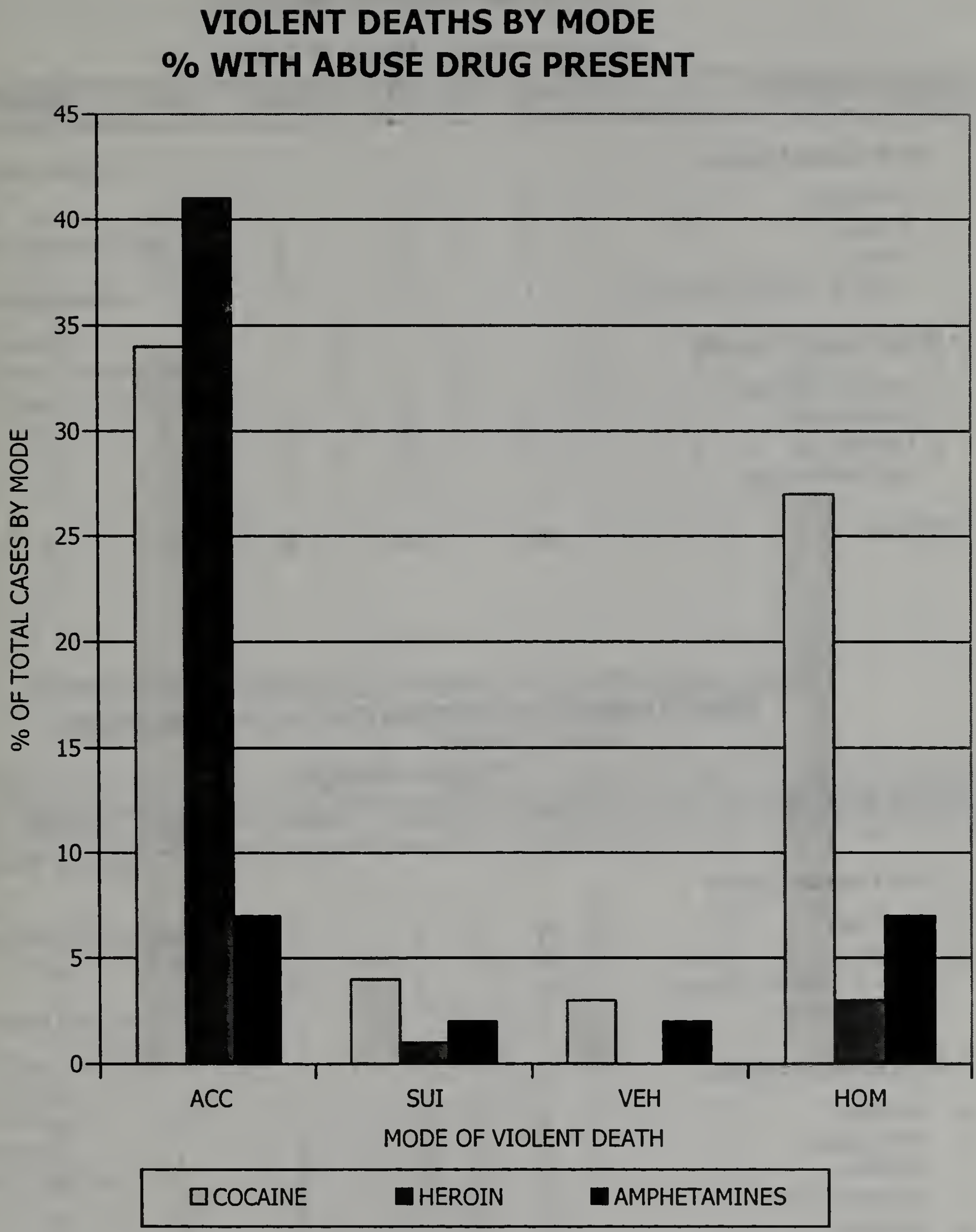

VIOLENT DEATHS BY MODE
% WITH ABUSE DRUG PRESENT
45
40
35
30
25
20
15
10
5
0
% OF TOTAL CASES BY MODE
ACC
SUI
VEH
HOM
MODE OF VIOLENT DEATH
☐ COCAINE
■ HEROIN
■ AMPHETAMINES

Figure 26.

TABLE XXXVII. DEATHS INVOLVING HEROIN

HEROIN PRESENT ALONE

Manner of Death

CAUSE OF DEATH	ACC	SUI	HOM	NC	UND	TOTAL
Drug Caused Deaths						
Overdose	41	0	0	0	0	**41**
Fasciitis	3	0	0	0	0	**3**
Sepsis	1	0	0	0	0	**1**
Acute & Chronic Drug Abuse	1	0	0	0	0	**1**
Drug Related Deaths						
Alveolar Damage	1	0	0	0	0	**1**
Endocarditis	0	0	0	3	0	**3**
Fasciitis	2	0	0	0	0	**2**
Leg Hemorrhage	0	0	0	1	0	**1**
TOTALS	**49**	**0**	**0**	**4**	**0**	**53**

HEROIN PRESENT IN COMBINATION WITH OTHER DRUGS

Manner of Death

CAUSE OF DEATH	ACC	SUI	HOM	NC	UND	TOTAL
Drug Caused Deaths						
Overdose	81	0	0	0	1	**82**
Sepsis	4	0	0	0	0	**4**
AIDS & Acute & Chronic Drug Abuse	0	0	0	1	0	**1**
Drug Related Deaths						
Asphyxia	1	0	0	0	0	**1**
Endocarditis	0	0	0	1	0	**1**
Fasciitis	1	0	0	0	0	**1**
Gunshot Wound	0	0	1	0	0	**1**
Hanging	0	1	0	0	0	**1**
Intracerebral Hemorrhage	0	0	0	1	0	**1**
Leg Hemorrhage	0	0	0	1	0	**1**
Neck Injury	0	0	1	0	0	**1**
TOTALS	**87**	**1**	**2**	**4**	**1**	**95**

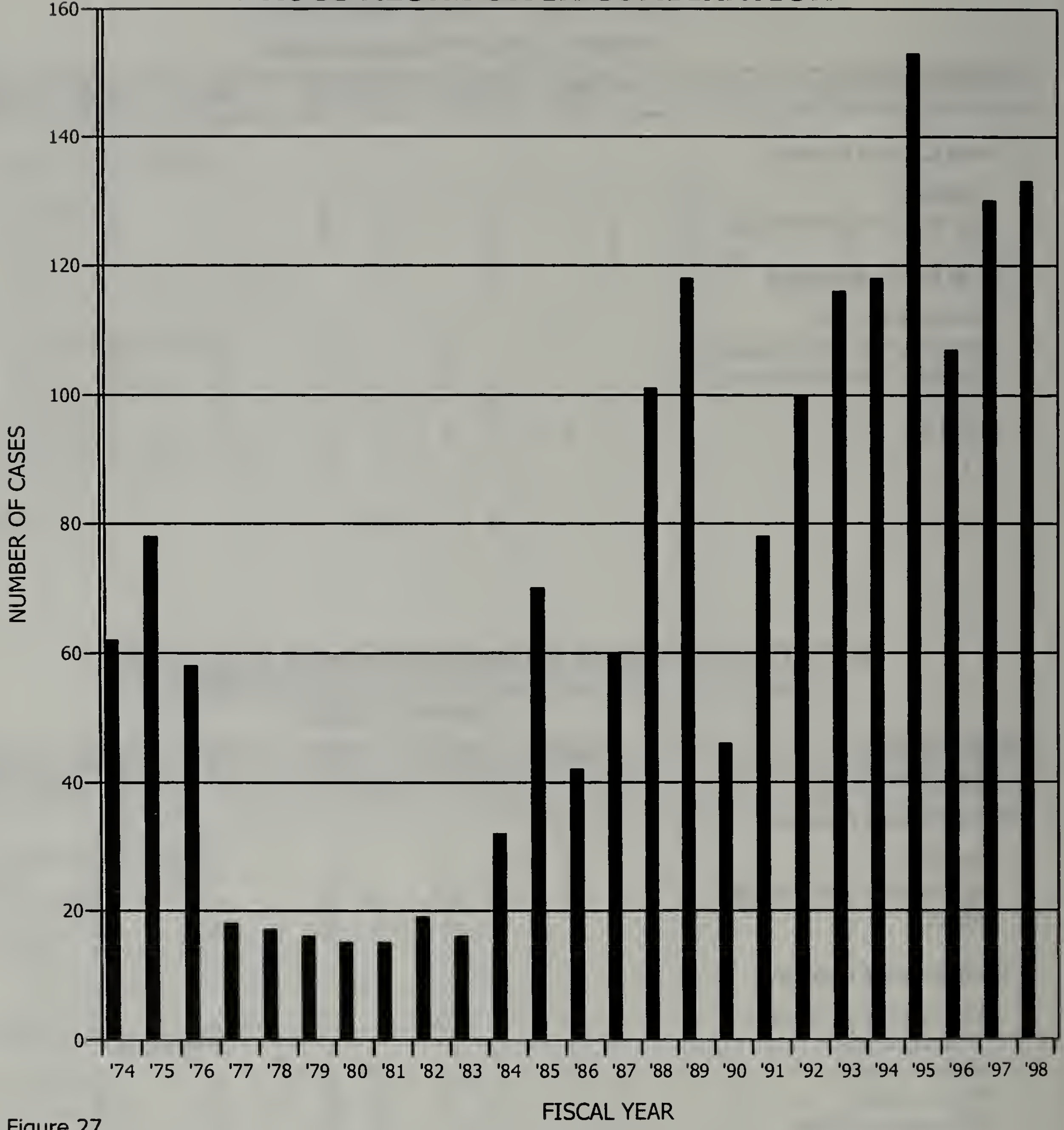
TABLE XXXVIII. DEATHS INVOLVING AMPHETAMINES

AMPHETAMINES PRESENT ALONE

	Manner of Death					
CAUSE OF DEATH	**ACC**	**SUI**	**HOM**	**NC**	**UND**	**TOTAL**
Drug Caused Deaths						
Overdose	3	0	0	0	0	**3**
Intracerebral Hemorrhage	1	0	0	0	0	**1**
Drug Related Deaths						
Gunshot Wound	0	1	1	0	0	**2**
Hypertrophic Cardiomyopathy	0	0	0	1	0	**1**
Multiple Traumatic Injuries	1	0	0	0	0	**1**
TOTALS	**5**	**1**	**1**	**1**	**0**	**8**

AMPHETAMINES PRESENT IN COMBINATION WITH OTHER DRUGS

	Manner of Death					
CAUSE OF DEATH	**ACC**	**SUI**	**HOM**	**NC**	**UND**	**TOTAL**
Drug Caused Deaths						
Overdose	14	0	0	0	0	**14**
Intracerebral Hemorrhage	1	0	0	0	0	**1**
Sepsis	1	0	0	0	0	**1**
Drug Related Deaths						
AIDS & Acute & Chronic Drug Abuse	0	0	0	1	0	**1**
Gunshot Wound	0	0	3	0	0	**3**
Motor Vehicle	1	0	0	0	0	**1**
Necrotizing Fasciitis	1	0	0	0	0	**1**
TOTALS	**18**	**0**	**3**	**1**	**0**	**22**



DEATHS DUE TO HEROIN

BY FISCAL YEAR

DRUGS ALONE OR IN COMBINATION

Figure 27.

GLOSSARY

ALKALOID OF MORPHINE GROUP	Typically referred to as morphine-type alkaloid, it is the chemical substance found in body fluids after the injection of heroin or other drugs derived from opium.
AUTOPSY	A scientific dissection of the human body to determine the cause and nature of death in order to detect public health hazards, determine the method or type of death in homicides and improve the level of medical care in the community. In some cases, showing that no injury or wrongdoing was present is of great emotional and stabilizing value to the family
FORENSIC PATHOLOGY	The specialty field of medicine involving the application of medical and pathology principles in determining the cause and manner of sudden, unexpected, and medically unattended deaths. This includes the type and nature of injury, public health hazards, type or nature of homicide weapon, the relation of injury to death and interpreting other factors for the court. These data are prepared and presented to the judicial system or public health interests in keeping with the best available knowledge
MEDICAL EXAMINER	A physician specifically trained in forensic pathology who is responsible for investigating and determining the cause and manner of sudden or unexpected death
MODE OF DEATH	Indicates the manner of death, such as natural, accident, suicide or homicide, and is to be distinguished from cause of death, which is purely a medical determination
MODE UNDETERMINED	With the cause of death determined, investigative data do not clearly support one of two possible modes and either one is possible without prejudice
PATHOLOGY	That branch of medicine which deals with the essential nature of disease, especially in the structural or functional changes in tissues, organs or systems of the body causing disease. It involves the diagnosis of disease by microscopic or chemical analysis
SEROLOGY	That branch of pathology which deals with the analysis of blood and body fluids. Blood types for identification, exclusion of a suspect or judicial purposes are examples of the use in this office
TOXICOLOGY	The scientific study of poisons, their detection, actions and treatment. The relationship of drug levels to emotional or personality change, behavioral or reasoning ability are frequent decisions based on these data
TOXICOLOGY NOT VALID OR ELIMINATED	This term indicates that the deceased lived long enough after the injury to have eliminated some or all toxic agents from the body

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ANNUAL REPORT

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MEDICAL EXAMINER'S OFFICE
City and County of San Francisco, California

ANNUAL REPORT
July 1, 1999 - June 30, 2000

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ity and County of San Francisco **Chief Medical Examiner**

December 2000

The Honorable Willie L. Brown, Jr., Mayor
The Honorable Board of Supervisors
Mr. Ryan Brooks, Director of Administrative Services
Citizens of San Francisco

The attached Annual Report covers the fiscal year 1999-2000. It represents the final report that will be prepared by Dr. Donna Allison and Ms. Lisa Nasir. Both have spent a considerable amount of time and effort in gathering the data and preparing the interpretations that have made these reports so valuable to this department, other departments, commissions and to the County. This Annual Report, therefore, is dedicated to Dr. Allison and Ms. Nasir in recognition of their efforts.

This report is the summation of much of the statistical and demographic data generated as a result of the work performed by members of this department. It must always be remembered that each "bit" of data represents something about the life of an individual person. The purpose of gathering these data is to establish information about the state of health of our community. It also gathers information about problems, both medical and social, that affect the wellbeing of our citizens. From this information should come an improved understanding of those problems that need to be addressed. In other cases, these data mark the improvement or lessening of a problem previously identified and targeted by another agency for attention.

By looking at the information on injuries, infection or drug toxicity, some of the necessary basis for an informed opinion about the extent of our public health problems and potential solutions for improved community health can be formulated. By looking at the information on violence, drug abuse, domestic violence and natural disease, methods and plans for prevention and treatment can be formulated by those with that responsibility.

This report also includes information about the number of individuals arrested for driving under the influence of alcohol and drugs.

Information, such as that contained here, has paid off handsomely in the past, leading to programs that have reduced infant deaths and injuries. Other research has resulted in a number of peer reviewed papers in forensic medicine and toxicology.

I continue to be very proud of the professional individuals in this department. Our work is an extremely difficult emotional and physical one. Our reputation for helping families at a time of grief is appreciated primarily by those families. Nevertheless, that is a valuable reward for the caring people in the office. That no disease can get by our detection and no sinister death go undetected is our goal. Our reports must be reliable and true. That reputation within the community is important to those families and agencies that depend upon the accuracy and completeness of our work.

Boyd G. Stephens, M.D.
Chief Medical Examiner

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ACCREDITED NATIONAL ASSOCIATION OF MEDICAL EXAMINERS

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INTRODUCTION

The **Medical Examiner** is appointed by law to many responsibilities, the foremost of which is the investigation and certification of a variety of deaths including all deaths of other than natural causation, and any apparently natural deaths in which no physician can reasonably state the cause. The Medical Examiner can utilize any and all medico-legal investigative techniques, including autopsy, to establish both the medical cause of death, and mode or circumstances of death (natural, accident, homicide, suicide or undetermined).

The deaths which must be reported to the Medical Examiner, as required by various sections of the Government, Health and Safety and Penal codes, are as follows:

1. Homicide - known or suspected
2. Suicide - known or suspected
3. Following accident or injury (whether the accident or injury is the primary cause or contributory, with death occurring immediately or at some remote time)
4. Medical attendance of less than 20 days
5. No physician in attendance
6. Physician unable to state the cause of death (must be unable, not merely unwilling)
7. Poisoning (food, chemical, drug, therapeutic agents)
8. Occupational or industrial deaths
9. All deaths where a patient has not fully recovered from an anesthetic, whether in surgery, recovery room, or elsewhere
10. All deaths in operating rooms
11. All solitary deaths (unattended by physicians or other person in the period immediately preceding death)
12. All deaths in which the patient is comatose throughout the period of the physician's attendance
13. All deaths of unidentified persons
14. All deaths in which there are grounds to suspect that the death occurred in any degree from a criminal act
15. All deaths involving contagious disease - known or suspected - and constituting a public health hazard
16. Deaths in prison or while under sentence
17. All deaths associated with a rape - known or alleged - or crime against nature
18. All deaths related to or following abortion - known or suspected
19. All deaths involving drowning, fire, hanging, gunshot, stabbing, cutting, starvation, exposure, alcoholism, drug addiction, strangulation or aspiration

Additional mandated responsibilities include protecting and safekeeping of property belonging to deceased individuals, conducting inquests when indicated, maintaining proper public records, making reports to other agencies, identification of deceased persons, interment of indigent dead, and many other death related activities.

FORENSIC MEDICINE

Forensic medicine generally is considered to be a marriage of medicine and the forensic sciences oriented to medico-legal issues. The field is wide-ranging and growing, becoming even broader in scope than the traditional concept as practiced in Europe. As a Medical Examiner, we commonly examine living persons for medico-legal purposes, often interpreting the findings for court purposes.

There has been continued growth and accentuation of the role of forensic medicine in the legal and medico-legal world over the past year. This office has continued its role in forensic medicine for both living and dead, playing a vital role in the community.

We serve in a number of places in the community. Some of these include:

Examination and diagnosis of the living:

- Examination and evaluation of child abuse
- Examination and evaluation of sexual assault injuries
- Examination and evaluation of spousal abuse
- Evaluation of citizens' complaints against the Police Department
- Testimony and interpretation of hospital records and procedures
- Evaluation of force and patterned injuries
- Examination of victims and suspects for trace evidence and injuries
- Collection of blood from suspects and victims for serology, toxicology and other testing
- Court testimony on force, great body injury (GBI) and other issues
- Alcohol and drug interaction in driving under the influence cases and related issues
- Physiologic effects of drug interactions
- Toxicology, including environmental and industrial toxicities
- Teaching - hospitals, forensic, law enforcement, community
- Analysis for drugs on individuals on probation
- Analysis for drugs on management control cases for the County

Examination and evaluation of the dead:

- Scene investigation, reconstruction and analysis
- Evidence collection and testing
- Blood spatter analysis and interpretation
- Patterned evidence analysis and interpretation
- Trace evidence collection
- Time and place of death information
- Forensic autopsy - consultation and interpretation
- Analysis for chemical and limited serology testing
- Forensic toxicology
- Consultation with District Attorney and Public Defender
- Reconstruction Analysis and court presentation
- Teaching - forensic and legal

DEPARTMENT STATUS AND FUTURE

As with the report last year, the principal difficulty for our department during this fiscal year was recruitment and retention of professional and investigative staff. Our salaries are not competitive and, with the well-known high cost of living in the Bay Area, we cannot easily attract qualified individuals to our office. The pool of specially trained individuals in our branches of the forensic sciences is very small, the competition is high, and other facilities can often make more attractive offers. Additionally, the complexity of our system makes rapid adjustment to the competitive recruitment process very difficult. For example, by law, we cannot pay for travel of a candidate to this office for an interview or for interview expenses, nor can we help with moving costs. Most other facilities can do all of these things and more. As a result, we often find that even with a nearly full-time professional recruiter for forensic pathologists, we have difficulty. We often get individuals right out of a training program who then gain some experience and additional training with us, and then leave in one or two years for a more attractive job elsewhere. Additionally, our system of personnel management is restrictive and cumbersome, requiring long time periods to make adjustments. It is not aligned with the professional cycles of recruitment, selection or appointments, or even meeting various "windows" for announcements and offers. Our system is more attuned to local recruitment, rather than on an international scope, which is where we have to go. With no local training programs, all recruitment must be from some distance. All these problems make recruitment and retention our major problem.

Keeping our computers and scientific instruments and methods current is also a continuing challenge. Technology in the forensic sciences is changing rapidly and five-to-ten-year-old systems are often outdated. In some cases the hardware is no longer supported by the original manufacturer. The forensic sciences are advancing so rapidly that new instruments and skills are necessary to keep pace with the requirements of the justice system. These specialty instruments are often expensive and require a considerable amount of training to operate efficiently.

As a medical examiner's department, we have continued to work within the state and local programs to identify and reduce public health, social and medical risks. There have been significant reductions in children's deaths, and inroads have been made in reducing other types of deaths or injuries through information shared with other individuals or agencies.

Our future efforts are to get the office fully staffed, to restart our forensic training program, improve our equipment and improve the training of our staff. We have targeted several specific tasks. These include continuing work in sudden infant death and death prevention for infants and children. We want to help reduce injuries on our city streets. We plan to continue work on the domestic violence prevention program and drug intervention programs. Finally, at full strength, we would like to return to teaching within our department and in the local hospitals. The teaching program provides many benefits to the community and helps to improve relations with the many agencies we interact with on a daily or weekly basis. Getting our forensic fellowship reinstated would give us a source of recruitment of forensic pathologists as well as the ability to train physicians for other communities.

DEPARTMENTAL COSTS

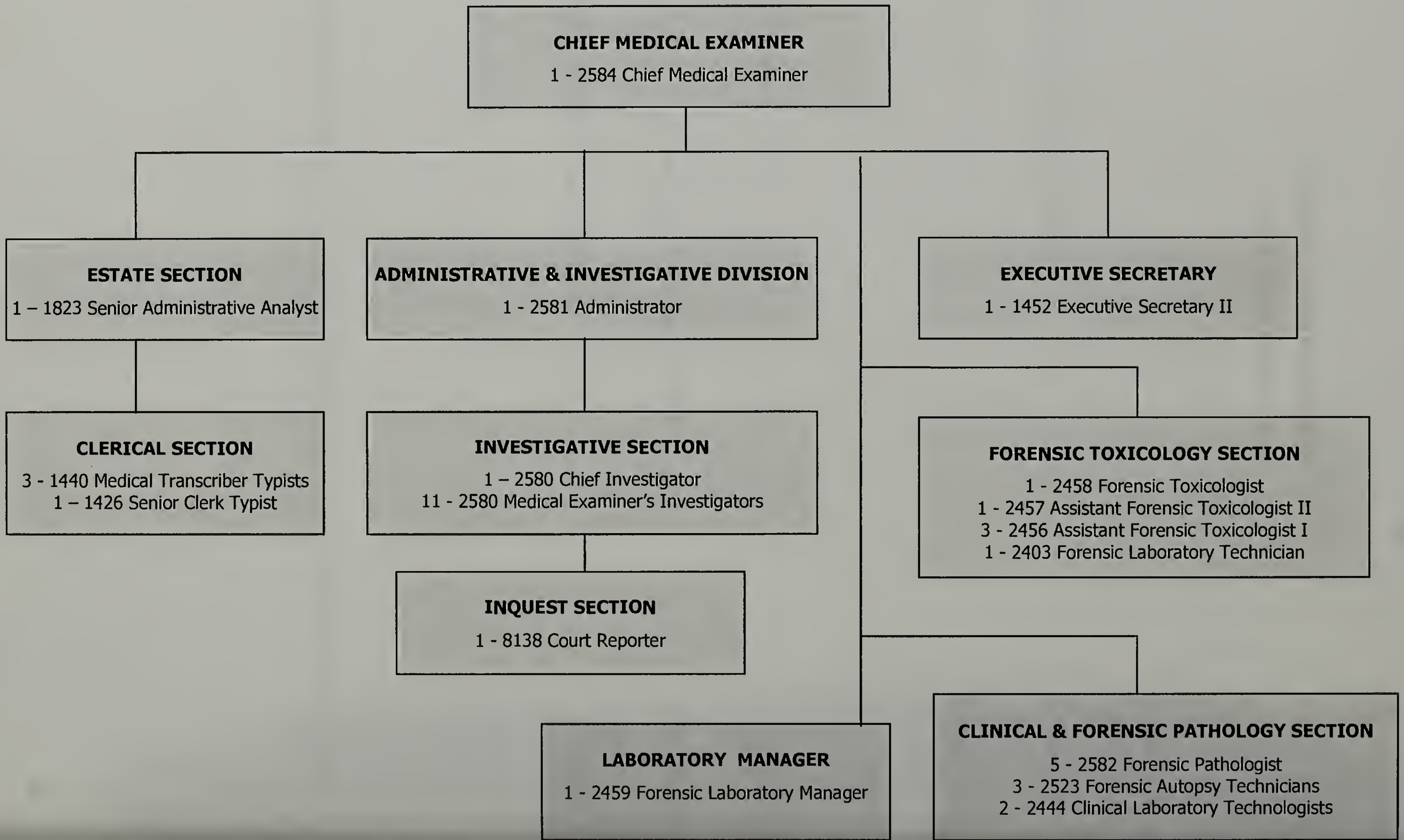
FISCAL YEAR 1999 - 2000

Total Budget	$3,756,220.00
Transfers to Controller: Health and Retirement.	$546,303.00
Net Budget (all other costs)	$3,209,917.00
Total Cases	4,203
Cost Per Case Investigated.	$763.72
Revenues (sales of records, public auctions, fee-for-service work)	$193,637.00
Total Costs Ad Valorum Taxes Per Case Investigated	$717.65

As indicated elsewhere, this includes all investigative, administrative, scientific and expert witness costs to the County.

ORGANIZATIONAL CHART

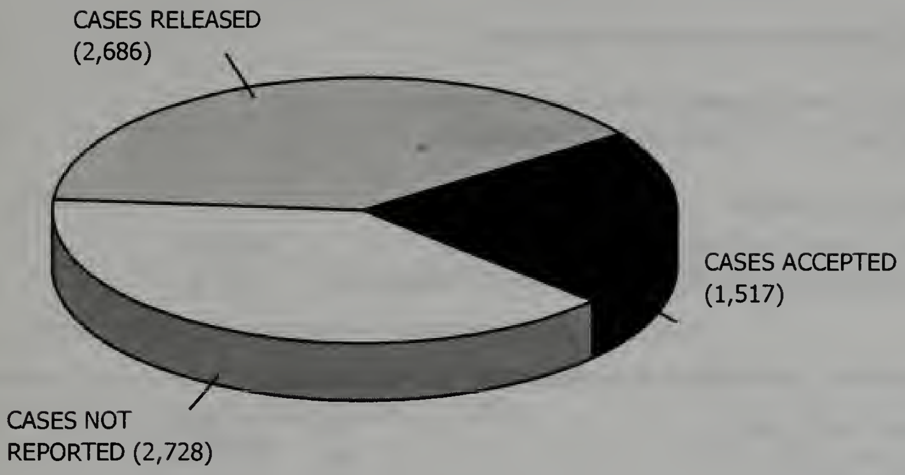
Medical Examiner's Office


CHIEF MEDICAL EXAMINER
1 - 2584 Chief Medical Examiner
ESTATE SECTION
1 – 1823 Senior Administrative Analyst
CLERICAL SECTION
3 - 1440 Medical Transcriber Typists
1 – 1426 Senior Clerk Typist
ADMINISTRATIVE & INVESTIGATIVE DIVISION
1 - 2581 Administrator
INVESTIGATIVE SECTION
1 – 2580 Chief Investigator
11 - 2580 Medical Examiner's Investigators
INQUEST SECTION
1 - 8138 Court Reporter
EXECUTIVE SECRETARY
1 - 1452 Executive Secretary II
FORENSIC TOXICOLOGY SECTION
1 - 2458 Forensic Toxicologist
1 - 2457 Assistant Forensic Toxicologist II
3 - 2456 Assistant Forensic Toxicologist I
1 - 2403 Forensic Laboratory Technician
LABORATORY MANAGER
1 - 2459 Forensic Laboratory Manager
CLINICAL & FORENSIC PATHOLOGY SECTION
5 - 2582 Forensic Pathologist
3 - 2523 Forensic Autopsy Technicians
2 - 2444 Clinical Laboratory Technologists

COUNTY DEATHS

FISCAL YEAR 1999-2000

Figure 1.

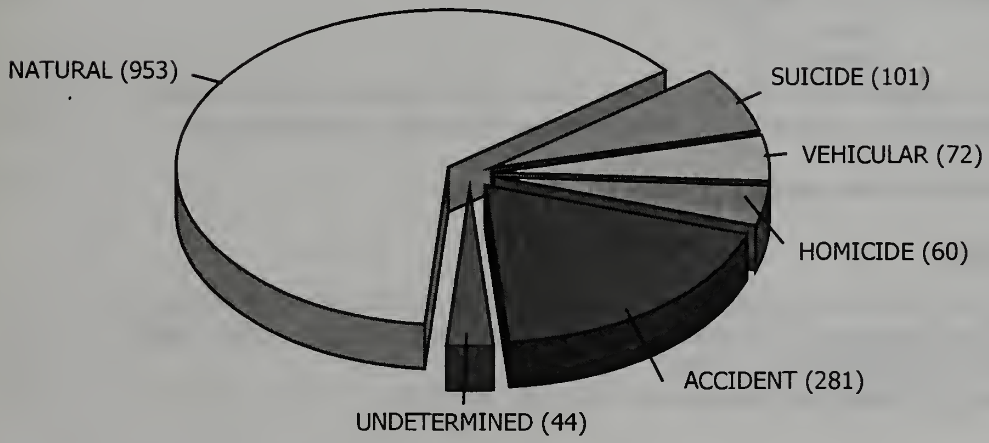


MANNER OF DEATH

FISCAL YEAR 1999-2000

JURISDICTION ON 1,517 CASES

Figure 2.



FISCAL YEAR 1999-2000

Total Deaths in County	6,931*
Total Deaths Reported to Medical Examiner	4,203
Cases Reported, Investigated and Cleared by the Medical Examiner for physician's signature	2,686
Medical Examiner's Cases	1,517

% County Deaths Reported to Medical Examiner	60.6 %
% County Deaths Having Medical Examiner's Jurisdiction	21.9 %

Cases Accepted by the Medical Examiner (by manner of death) **

1. Natural Deaths (NC)	953	(62.8%)
2. Accidents (ACC)	281	(18.5%)
3. Suicides (SUI)	101	(6.7%)
4. Homicides (HOM)	60	(4.0%)
5. Mode Undetermined (UND)	44	(2.9%)
6. Sudden Infant Death Syndrome (SIDS)	6	(0.4%)
7. Vehicular (VEH)	72	(4.7%)

Autopsy Index

Full Autopsy	58%
Partial Autopsy/External Examination/Record Review ***	42%

Dispositions Authorized by the Medical Examiner

Indigents and fetus dispositions		173
Adults	164	
Infants	9	
Cases cremated by funeral home with Public Administrator-controlled funds		95
Cases buried by funeral home with Public Administrator-controlled funds		67

Inquests Held or Depositions Taken	13

Identification

Persons brought to Medical Examiner's Office with insufficient identification	211
Persons subsequently identified by fingerprints, dental X-rays or other means	210
Persons interred as unidentified	0
Fingerprints taken and forwarded to FBI, CII, or SFPD	419

*   This number represents cases registered with the San Francisco Department of Public Health during fiscal year 1999-2000.

** The abbreviations following each manner of death will be used in most tables in this report.

*** Includes 83 indigent cases, all of whom were externally examined by a Medical Examiner's Investigator.

EXAMINATIONS AND REFERRALS

FISCAL YEAR 1999-2000

Examinations

Suspected child abuse	3

Specimens submitted for toxicology testing from living individuals

Living victims or defendants in violent crimes	48
Management control - other City departments	961
DUI suspects	594

MEDICAL EXAMINER CASES
FISCAL YEAR 1999-2000

In fiscal year 1999-2000, there were 6,931 deaths registered in San Francisco County. Of these deaths, 4,203 were reported to the San Francisco Medical Examiner's Office. The Medical Examiner's Investigators examined the previous medical history, circumstances surrounding the deaths and, in many cases, the scene of the death, and determined that 1,517 of these deaths came under the jurisdiction of this office. (See Figure 1, page 8). Full or partial autopsies or external examinations were performed on all cases.

1. The highest total **number of deaths** occurred in December 1999. The highest number for the various manners of death occurred during other months (e.g., highest number of homicides and suicides in August 1999, the highest numbers of vehicular deaths in June 2000, and non-vehicular accidents in both July and October 1999). See Table I and Figure 3, page 12.

2. The **racial distribution** for each manner of death was quite variable. For example, the value of the ratio of whites/blacks was 3.8 overall, 3.8 for accidents, 24.7 for suicides (as compared to 27.8 for 1989-90, 13.5 for 1996-97, 10.9 for 1997-98, and 7.5 for 1998-99) and 1.0 for homicides. See Table II, page 13 and Figure 5, Page 15.

3. The **age range distribution** for each manner of death was also variable. For example, the highest number of accidental deaths and suicides occurred in the 40-49 year age group, the highest number of homicides occurred in the 20-29 year age group, and the highest number of vehicular deaths in the 70-79 year age group. See Table III, page 13.

4. The **overall distribution** of deaths by sex (ratio of male/female) was 2.2, but this varied by manner of death from 3.6 in deaths due to homicides to 1.5 in vehicular deaths. See Table IV and Figure 4, page 14.

MEDICAL EXAMINER CASES FOR 1999-2000

TABLE I. MANNER OF DEATH - MONTHLY COMPARISON

Manner of Death

Month of Death	ACC	HOM	SUI	NC	VEH*	SIDS**	UND	TOTALS
July	32	5	7	77	0	1	5	127
August	22	10	12	61	10	2	3	120
September	25	4	7	56	4	0	4	100
October	32	7	9	78	9	1	4	140
November	18	4	7	77	5	0	2	113
December	23	7	10	96	6	0	3	145
January	24	3	8	96	5	1	4	141
February	21	1	10	87	5	0	3	127
March	21	2	8	90	7	1	4	133
April	17	7	8	71	6	0	4	113
May	24	6	9	77	4	0	5	125
June	22	4	6	87	11	0	3	133
TOTALS	**281**	**60**	**101**	**953**	**72**	**6**	**44**	**1,517**

* = Vehicular Death. These include 11 cases ruled to be homicide, 58 cases ruled to be accidental, and 3 ruled to be suicide.

** = Sudden Infant Death Syndrome

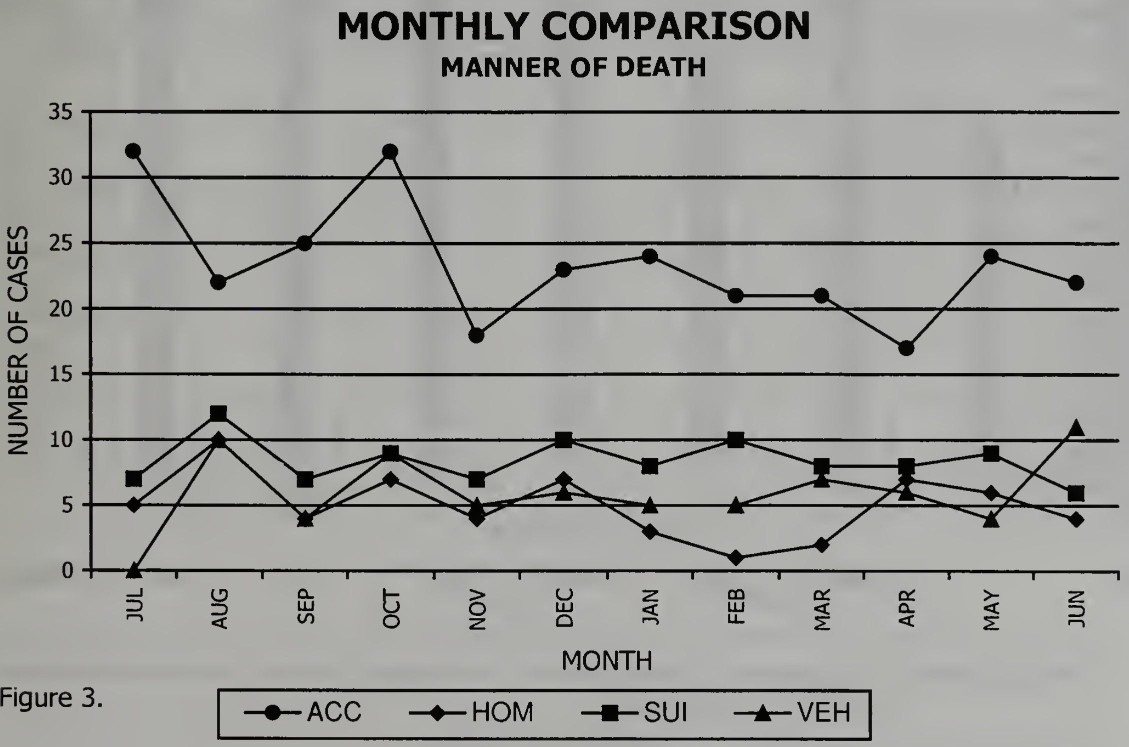


Figure 3.

TABLE II. MANNER OF DEATH BY RACE

Manner of Death

Race	ACC	HOM	SUI	NC	VEH*	SIDS**	UND	TOTALS
White	192 (68%)	22 (37%)	74 (73%)	641 (67%)	42 (58%)	4 (67%)	33 (75%)	1,008 (66%)
Black	51 (18%)	23 (38%)	3 (3%)	174 (18%)	9 (12%)	0 (0%)	7 (16%)	267 (18%)
Asian	26 (9%)	13 (22%)	24 (24%)	127 (13%)	19 (26%)	1 (17%)	3 (7%)	213 (14%)
Other / Unknown	12 (4%)	2 (3%)	0 (0%)	11 (1%)	2 (3%)	1 (17%)	1 (2%)	29 (2%)
TOTALS	**281**	**60**	**101**	**953**	**72**	**6**	**44**	**1,517**

TABLE III. MANNER OF DEATH BY AGE

Manner of Death

Age Group	ACC	HOM	SUI	NC	VEH *	UND	TOTALS
0-11 months	2	0	0	16	0	1	19
1-5 years	2	0	0	0	2	0	4
6-12 years	4	0	0	0	2	0	6
13-16 years	0	3	0	0	2	0	5
17-19 years	3	6	0	1	5	3	18
20-29 years	23	21	19	11	9	4	87
30-39 years	59	13	12	43	10	5	142
40-49 years	79	10	23	129	8	20	269
50-59 years	44	2	17	179	10	4	256
60-69 years	16	3	13	160	6	0	198
70-79 years	19	0	5	211	11	4	250
80-89 years	19	1	10	135	6	0	171
90 + years	11	0	2	74	1	2	90
Unknown	0	1	0	0	0	1	2
TOTALS	**281**	**60**	**101**	**959**	**72**	**44**	**1,517**

* = Vehicular Death. These include 11 cases ruled to be homicide, 58 cases ruled to be accidental, and 3 ruled to be suicide.

** = Includes 6 SIDS (Sudden Infant Death Syndrome) deaths.

TABLE IV. MANNER OF DEATH BY SEX

	Manner of Death							
Sex	**ACC**	**HOM**	**SUI**	**NC**	**VEH***	**SIDS****	**UND**	**TOTALS**
Male	210	47	80	629	43	3	32	1,044
Female	71	13	21	324	29	3	12	473
Unknown	0	0	0	0	0	0	0	0
TOTALS	**281**	**60**	**101**	**953**	**72**	**6**	**44**	**1,517**

* = Vehicular Death. These include 11 cases ruled to be homicide, 58 cases ruled to be accidental, and 3 ruled to be suicide.

** = Includes 6 SIDS (Sudden Infant Death Syndrome) deaths.

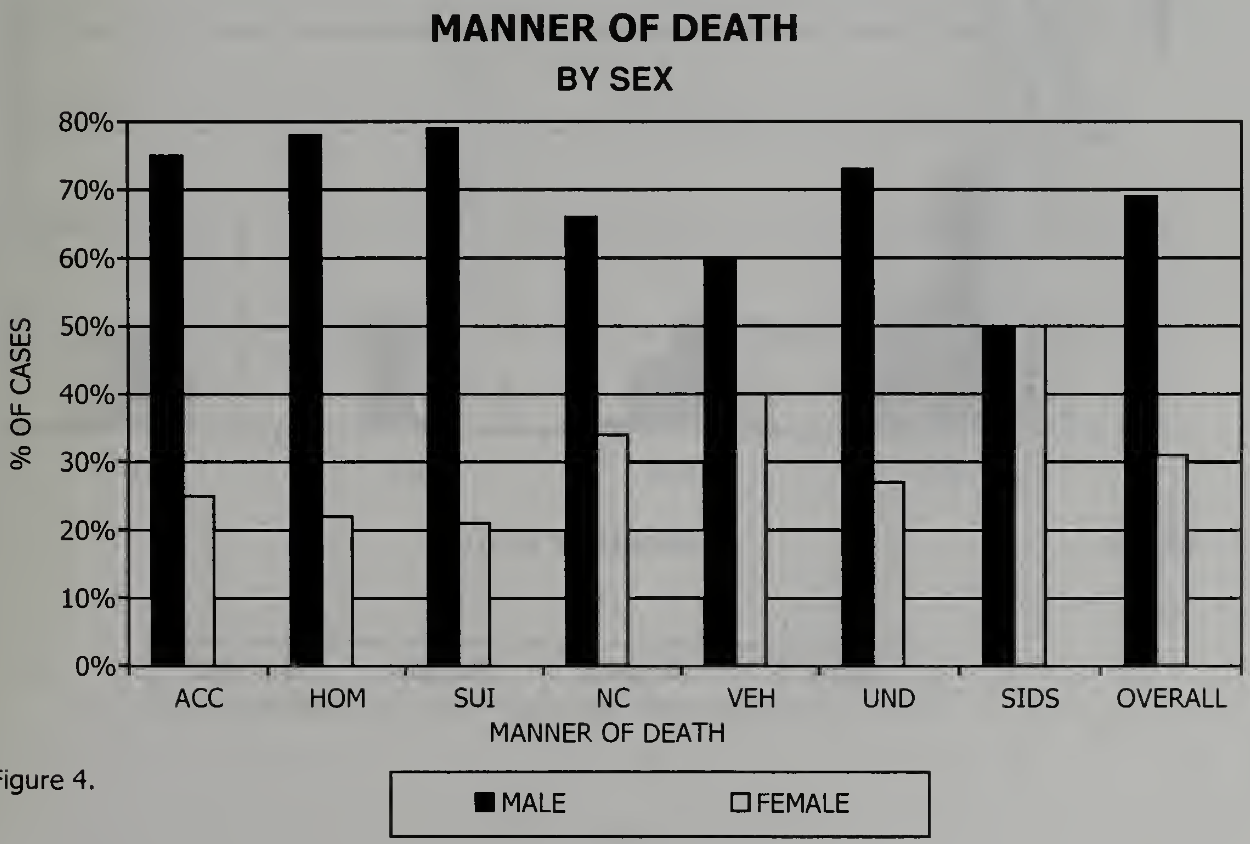


Figure 4.

MANNER OF DEATH
BY RACE

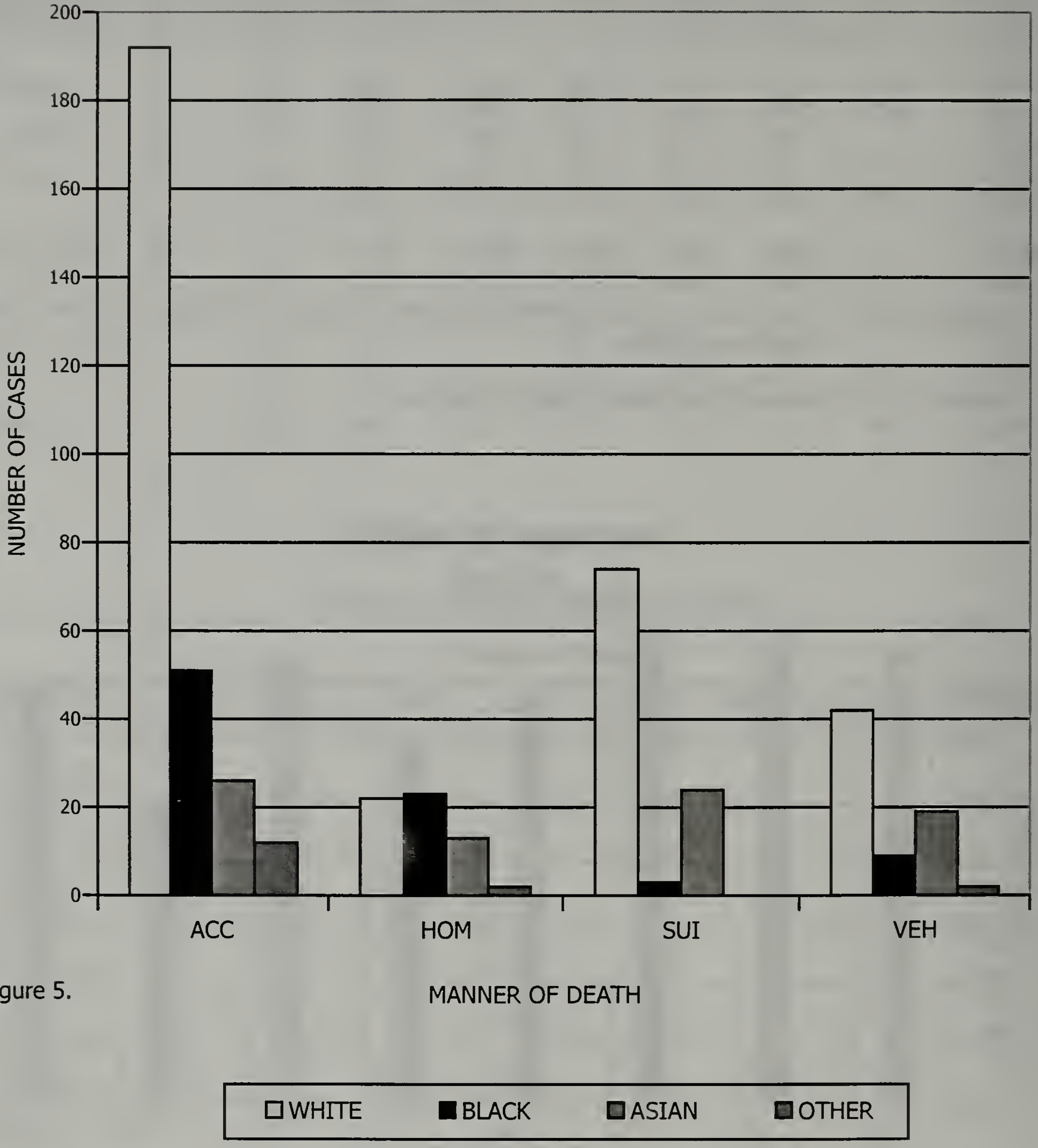


Figure 5.

YEARLY COMPARISON OF MEDICAL EXAMINER'S CASES

Comparisons of manners of death as well as methods used over the last ten fiscal years are presented in this section. The most significant differences which have occurred over the last ten years which can be observed in these tabulations include:

1. Regarding **manners of death**, the number of non-vehicular homicides (60) during fiscal year 1999-2000 was only a 1.7% increase from the 59 homicides recorded in 1998-99. The number of accidental deaths (281) decreased by 8% from 1998-99. The number of cases ruled to be suicide (104) increased 13% from fiscal year 1998-99 but was still the second lowest number seen in the last thirteen fiscal years. The number of deaths due to natural causes (953) which came under the jurisdiction of this office decreased 11% from fiscal year 1998-99. The total number of vehicular deaths (72) was an increase of 20% from fiscal year 1998-99. (See Table V and Figure 6, page 18, Figure 2, page 8, and Figure 10, page 22.)

2. With respect to **methods used in homicide deaths**, most notable is that the number of homicides due to firearms (41) is the second lowest number in the last 10 years. However, deaths from firearms still account for the largest percentage of homicides (58% in 1999-2000). (See Table VI and Figure 7, page 19 and Figure 24, page 55).

3. There was a 13% increase in the **number of suicides** during the fiscal year 1999-2000 (104) as compared to 1998-99 (92). The total number of suicides is the second lowest number seen in the last 13 fiscal years. The increase in suicide deaths due to firearms from 1998-99 was 37% (from 19 to 26). Deaths from hanging increased 26% from 1998-99 (19 to 24). (See Table VII and Figure 8, page 20, and Figure 24, page 55).

4. Regarding **deaths ruled to be accidental**, the number of deaths due to drug overdoses decreased 18%, from 182 in 1998-99 to 150 in 1999-2000. Deaths from drug overdoses are the leading cause of accidental deaths (See Table VIII and Figure 9, page 21, and Figure 24, page 55).

YEARLY COMPARISONS OF MEDICAL EXAMINER'S CASES

TABLE V. YEARLY COMPARISON OF MANNER OF DEATH

	Fiscal Year									
Manner of Death	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**	**'98-'99**	**'99-'00**
Accident	229	266	286	270	296	319	283	349	307	281
Homicide	88	123	127	118	94	98	63	75	59	60
Suicide	154	153	132	136	124	156	139	111	90	101
Natural	911	885	930	816	925	1,115	1,034	1,086	1,075	959
Vehicular*	83	79	79	54	80	58	56	76	60	72
Undetermined	72	53	58	42	30	40	44	36	30	44
TOTALS	**1,537**	**1,557**	**1,612**	**1,451**	**1,549**	**1,789**	**1,619**	**1,733**	**1,621**	**1,517**

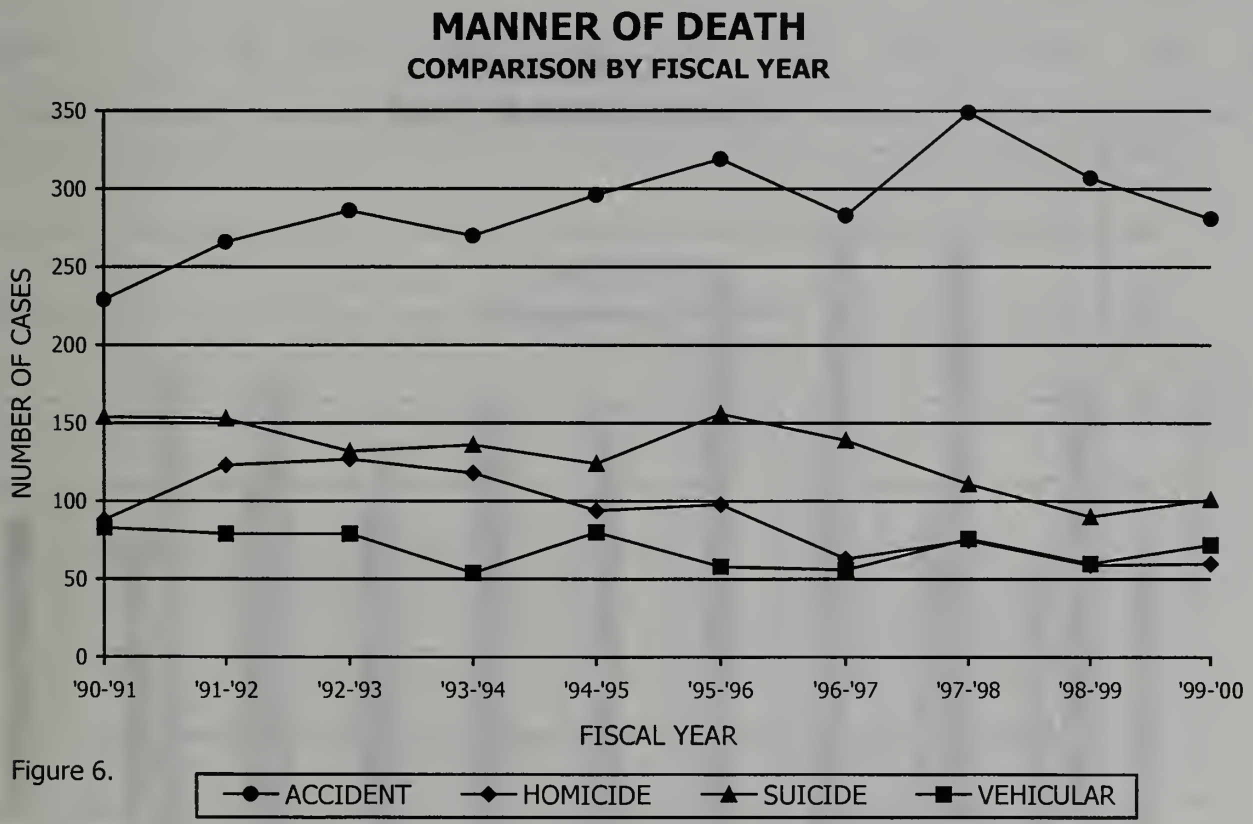


Figure 6.

* = Vehicular Death. These include 11 cases ruled to be homicide, 58 cases ruled to be accidental, and 3 ruled to be suicide.

TABLE VI. YEARLY COMPARISON OF HOMICIDE* METHODS USED

	Fiscal Year								
Method Used	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**	**'98-'99**
Firearms	50	70	75	83	68	59	47	46	35
Stabbing	17	20	24	18	14	16	6	18	10
Traumatic Injury	14	22	16	12	9	18	8	8	8
Vehicular	16	15	14	11	6	2	11	7	9
Asphyxia/Strang.	5	7	4	1	3	3	1	3	3
Other	2	4	8	4	0	2	1	0	3
TOTALS	**104**	**138**	**141**	**129**	**100**	**100**	**74**	**82**	**68**

* Total includes 11 vehicular homicide deaths.

HOMICIDES
COMPARISON BY YEAR

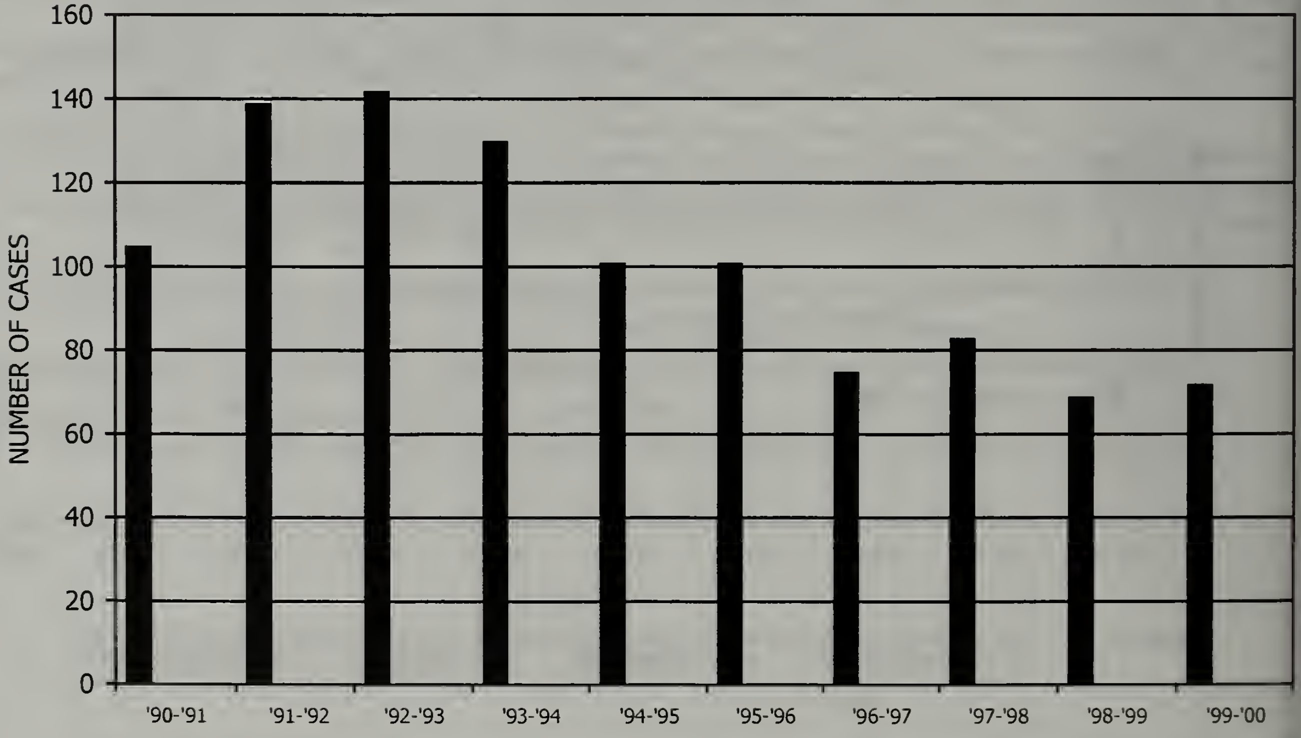


Figure 7.

TABLE VII. YEARLY COMPARISON OF SUICIDE METHODS USED

	Fiscal year									
Method Used	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**	**'98-'99**	**'99-'00**
Burning	2	0	0	1	4	0	1	0	2	1
CO Poisoning	5	6	5	3	1	3	1	2	1	1
Cutting/Stabbing	7	2	9	8	5	2	4	5	4	4
Drowning	1	2	3	1	3	9	5	4	2	0
Drugs/Poisons	36	44	31	25	37	49	31	27	25	24
Firearms	40	37	32	44	24	45	33	21	19	26
Hanging	25	23	22	22	19	19	30	32	19	24
Jump - Bay Bridge	0	2	1	5	2	1	2	1	3	0
Jump - Building	13	20	8	12	19	10	22	10	10	13
Jump - G.G. Bridge	13	4*	1	3	1	4	1	1	2	4
Jump - Other	-	2	3	3	0	1	0	1	0	1
Suffoc./Asphyxia	6	9	14	9	7	13	7	7	2	3
Vehicular/BART/Train	1	2	2	0	0	2	1	0	2	3
Other	6	0	2	0	2	0	2	0	1	0
TOTALS**	**155**	**153**	**133**	**136**	**124**	**158**	**140**	**111**	**92**	**104**

* Starting midway in fiscal year 1991-92, most Golden Gate Bridge suicides were handled by Marin County.

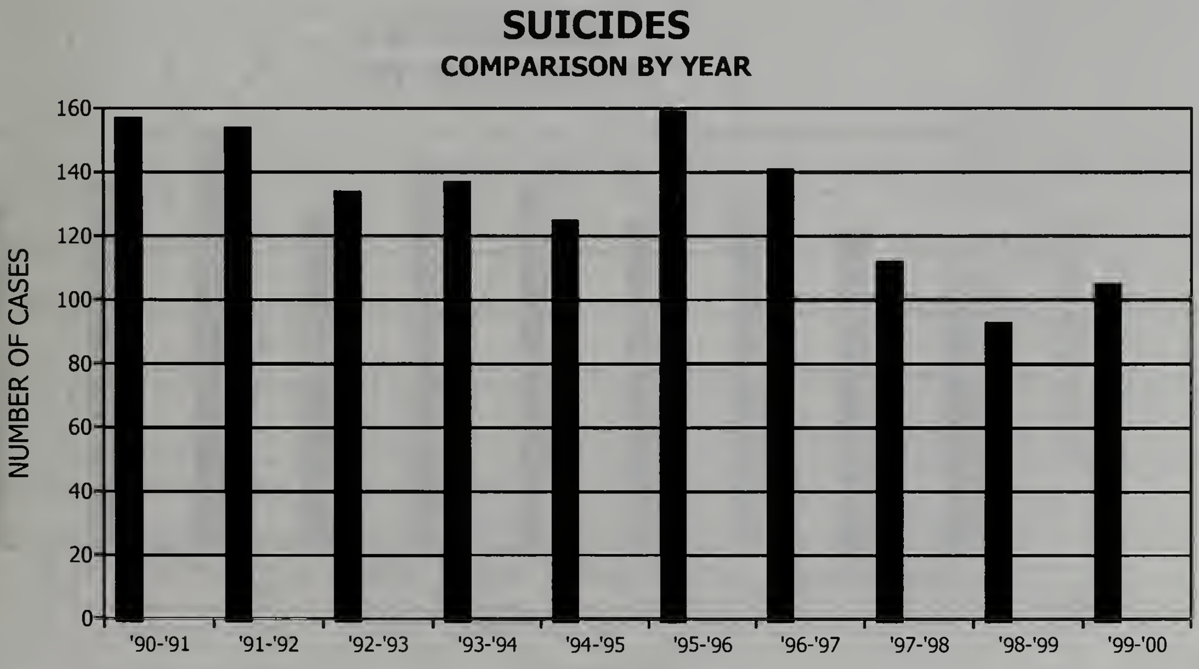


Figure 8. FISCAL YEAR

TABLE VIII. YEARLY COMPARISON OF ACCIDENTAL* DEATH SITUATIONS

	Fiscal year									
Situation	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**	**'98-'99**	**'99-'**
Asphyxia	3	3	5	5	2	11	15	11	5	1[illegible]
Aspiration	10	12	6	12	17	2	2	10	1	[illegible]
Burns	10	4	4	8	7	5	9	9	4	[illegible]
Drowning	12	4	5	11	6	5	10	9	6	[illegible]
Drug Reactions	4	2	0	1	3	0	2	0	7	[illegible]
Drug/Alc. Abuse Relat.	6	13	18	9	5	5	2	0	22	1[illegible]
Drugs/Poisons	97	123	156	158	169	210	166	199	182	15[illegible]
Falls	55	61	58	48	59	48	54	71	52	4[illegible]
Firearms	2	2	1	2	2	1	0	0	0	[illegible]
Hanging	2	0	1	1	1	2	0	0	0	[illegible]
Head Trauma	3	1	6	1	4	3	0	1	2	[illegible]
Medical Misadventure	12	18	8	5	6	13	13	20	15	[illegible]
Smoke/CO Inhal.	8	14	6	2	7	8	10	15	4	[illegible]
Other	5	9	9	7	8	6	0	4	7	[illegible]
TOTALS	**229**	**266**	**286**	**270**	**296**	**319**	**283**	**349**	**307**	**28[illegible]**

* Vehicular deaths are not included in this tabulation.

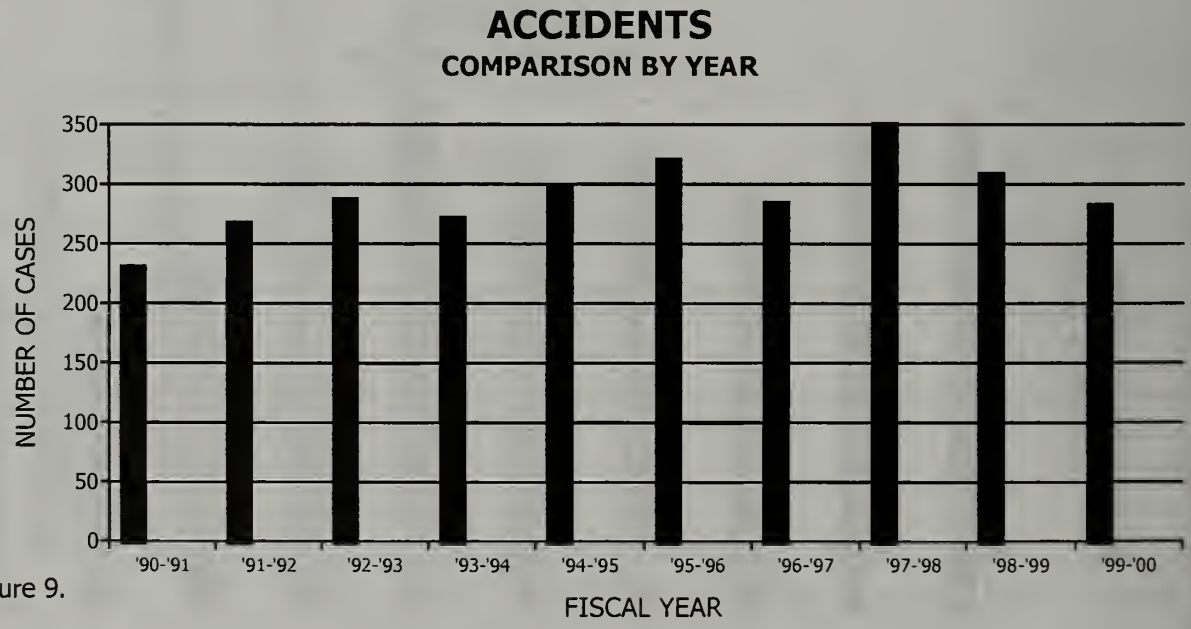


Figure 9.

Table IX. NUMBER OF VEHICULAR FATALITIES BY TYPE

	Fiscal Year									
Situation	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**	**'98-'99**	**'99-'00**
Pedestrian	27	37	39	29	36	27	23	43	32	39
Bicycle Driver	4	1	2	1	4	3	5	3	2	3
Auto Driver	21	10	11	9	19	13	9	8	14	12
Auto Passenger	16	8	6	8	10	6	11	9	7	3
Motorcycle Driver	10	11	13	6	6	7	5	9	5	7
Motorcycle Pass.	0	4	0	0	0	0	0	0	0	0
Truck Driver	0	0	4	1	1	1	2	2	0	1
Truck Passenger	0	0	2	0	2	1	0	0	0	3
Other/Unknown	5	8	2	0	2	0	1	2	0	4
TOTALS	**83**	**79**	**79**	**54**	**80**	**58**	**56**	**76**	**60**	**72**

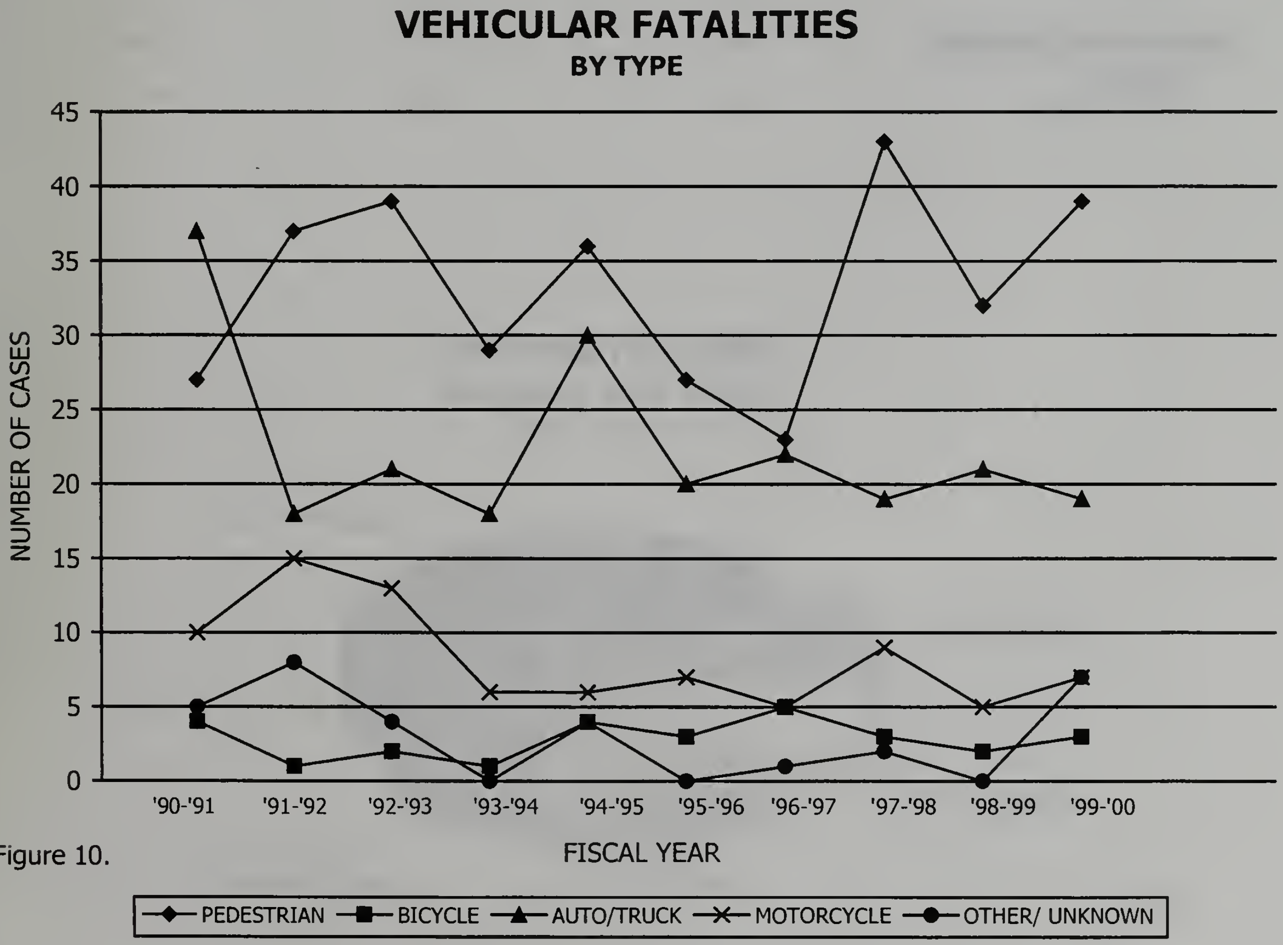


Figure 10.

TABLE IX. VIOLENT DEATHS

Of the 1,517 deaths investigated by the Medical Examiner's Office during 1999-2000, 558 were determined to be the result of violence.

Mode	Total Number	% of Medical Examiner Cases	% of County Deaths
ACCIDENT	**339**	**22.3**	**4.9**
Vehicular	58	3.8	
Non-Vehicular	281	18.5	
SUICIDES	**104**	**6.9**	**1.5**
Vehicular	3	0.2	
Non-Vehicular	101	6.7	
HOMICIDE	**71**	**4.7**	**1.0**
Vehicular	11	0.7	
Non-Vehicular	60	4.0	
MODE UNDETERMINED	**44**	**2.9**	**0.6**
Vehicular	0	0	
Non-Vehicular	44	2.9	

VIOLENT DEATHS

FISCAL YEAR 1999-2000

TOTAL = 558

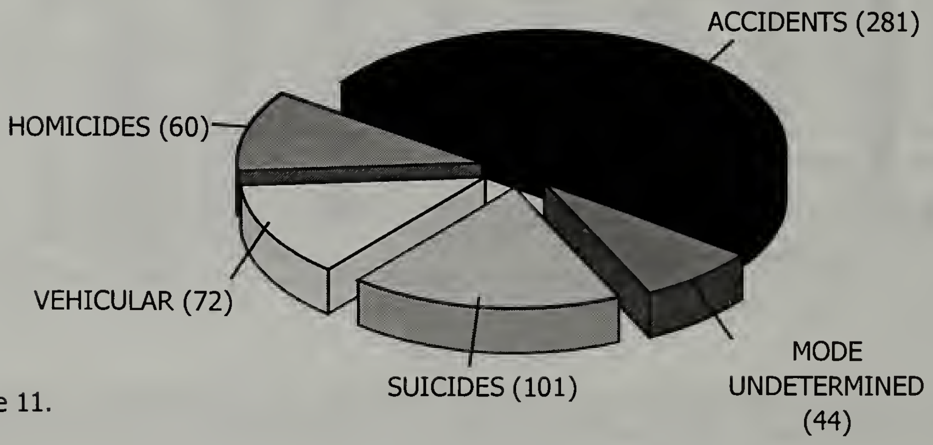


Figure 11.

ACCIDENTAL DEATHS

Three hundred and thirty-nine (339) deaths were ruled to have been due to accidental means during the 1999-2000 fiscal year. Of these, 281 were non-vehicular accidental deaths. The numbers of individuals dying by each manner of accidental death are indicated in Figure 12, page 26 and Table XI, page 27, and the percentages of all accidental deaths represented by each manner are indicated on Table XI, page 27.

Of the accidental death victims tested for alcohol and drugs (i.e. those in the hospital for less than 24 hours), many had significant levels of alcohol in their blood; some had abuse drugs present (See Table XI, page 27).

Abuse Drug Involvement (Table XII, page 28)

Overall, the number of times the four most common abuse drugs were found to be present in all accidental death cases was 228, an 11% decrease from fiscal year 1998-99 (256). (Note that more than one abuse drug may have been present in a single case.) This is in contrast to dramatic increases seen previously - from 110 cases in fiscal year 1990-91 to 163 cases in fiscal year 1991-92 (a 48% increase!) to 222 cases in fiscal year 1992-93 (a further 36% increase from the preceding fiscal year). Of the deaths *caused by* drugs, heroin (measured as morphine) was seen most frequently (107 cases), a decrease of 11% from last fiscal year's 120 cases. The second most frequently seen abuse drug in deaths *due to* drugs was cocaine (84 cases), a decrease of 10% from last fiscal year. Amphetamines were present in deaths *due to* drugs in 11 cases, a decrease of 35% from last year's count of 17 such deaths. The number of cases with cocaine *present* decreased 9% from the previous fiscal year (104 to 95). The number of cases with heroin *present* decreased by 9% (from 127 to 115 cases). Deaths with amphetamines *present* decreased 22% (23 to 18 cases). This follows a 33% decrease in cases with amphetamines present between 1994-95 (43 cases) and 1995-96 (29 cases). Abuse drugs may have played a role in accidental deaths due to aspiration (3 cases) and drowning (1 case).

Racial Distribution (Figure 13, page 29 and Table XIII, page 29)

Overall, accidental deaths occurred most frequently in whites. Deaths from falls occurred more frequently in whites (76%) than would be anticipated by the overall involvement of whites in accidental deaths (68%). Asians are much less involved in deaths due to drug/poisons (2%) than would be expected by the involvement of Asians in accidental deaths (9%) and are much more heavily represented in deaths due to falls (20%). Blacks are less heavily represented in deaths by falls (2%) than would be expected based on the general involvement of blacks in all types of accidental deaths (18%).

Age Distribution (Figure 14, page 30 and Table XIV, page 31)

Deaths due to asphyxia and smoke inhalation were the most common causes of accidental deaths in the youngest age groups (0-12 years). There were 3 non-vehicular accidental deaths in the age group from 13-19 years during 1999-2000, 2 of which were due to drugs. The most common cause of accidental deaths in people over 60 years of age was falls (67% of all deaths due to falls). Deaths due to drug overdoses are concentrated in the 30-49 year age group with 66% of all deaths due to drug overdoses occurring in this age group.

Distribution by Sex (Table XV, page 32)

Males are 3.0 times as likely as females to be the victims of non-vehicular accidental deaths. This difference is *more* pronounced in deaths due to drugs and *less* pronounced in deaths due to drowning.

NON-VEHICULAR ACCIDENTS

This category includes all unintentional fatalities. There were 281 accidental deaths (non-vehicular) which accounted for 18.5% of the Medical Examiner death investigations for the fiscal year of 1999-2000.

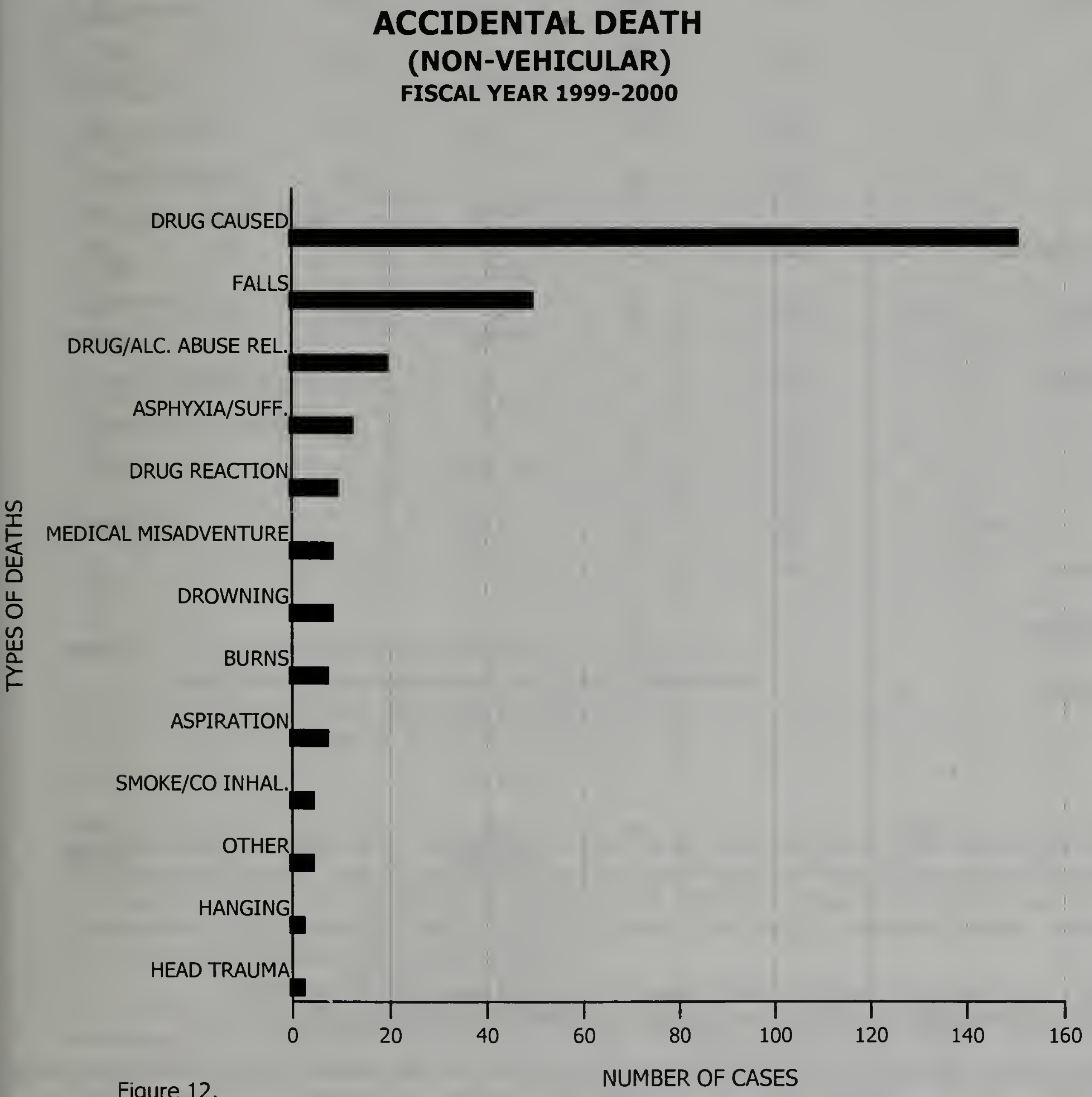


Figure 12.

TABLE XI. ACCIDENTAL DEATHS BY MODE

Drug and Alcohol Involvement

Method	Number	% Of Total Accidents	% With Alcohol *	# Positive (# Tested)	Ave. Alc. Conc. (g%)	% With Drugs **	# Positive (# Tested)
Asphyxia/Suffoc.	12	4.3	62	5 (of 8)	0.25	20	1 (of 5)
Aspiration	7	2.5	33	1 (of 3)	0.41	67	2 (of 3)
Burns	7	2.5	100	2 (of 2)	0.10	0	0 (of 3)
Drowning	8	2.8	20	1 (of 5)	0.07	25	1 (of 4)
Drug/Alc. Abuse Rel.	19	6.8	0	0 (of 16)	-	82	14 (of 17)
Drug Caused	150	53.4	48	68 (of 142)	0.16	85	123 (of 145)
Drug Reactions	9	3.2	0	0 (of 1)	-	100	1 (of 1)
Falls	49	17.4	27	6 (of 22)	0.16	0	0 (of 9)
Hanging	2	0.7	0	0 (of 2)	-	50	1 (of 2)
Head Trauma	2	0.7	0	0 (of 1)	-	0	0 (of 1)
Medical Misadvent.	8	2.8	0	0 (of 2)	-	0	0 (of 2)
Smoke/CO Inhal.	4	1.4	0	0 (of 4)	-	25	1 (of 4)
Other	4	1.4	0	0 (of 2)	-	0	0 (of 2)
OVERALL	**281**	**-**	**40**	**85** **(of 210)**	**-**	**73**	**144** **(of 198)**

* Refers to percentage of victims (of those tested) with positive blood ethyl alcohol levels.
** Refers to percentage of victims (of those tested) with positive tests for abuse drugs.

It should be noted that a blood ethyl alcohol concentration of 0.08% is considered to be intoxicated when driving.

TABLE XII. ABUSE DRUGS PRESENT IN NON-VEHICULAR ACCIDENTS

Situation	Drugs Cocaine	PCP	Heroin	Amphetamines
Asphyxia/Suffocation	0	0	0	1
Aspiration	1	0	1	1
Burns	0	0	0	0
Drowning	0	0	1	0
Drug Caused	84	0	107	11
Drug Reactions	0	0	0	1
Drug/Alc. Abuse Related	10	0	5	3
Falls	0	0	0	0
Hanging	0	0	1	0
Head Trauma	0	0	0	0
Medical Misadventure	0	0	0	0
Smoke / CO Inhalation	0	0	0	1
Other	0	0	0	0
TOTALS	**95**	**0**	**115**	**18**

NOTES: Drugs may have been present singly or in combination.
Drugs used therapeutically are not included in this tabulation.
There may be more than one drug present in a case.
Drugs were not tested for in every case.

Whether drugs are tested for or not depends on the type of case, the length of time the person was hospitalized before death, and the contribution that drug test results will make in determining the cause and manner of death. In many cases, drug testing is *not* performed. Therefore the above figures will provide only a rough idea of the relative incidence of abuse drug usage in accidental deaths. Bearing this in mind, the following evaluation is made.

The number of times the four most common abuse drugs were present in accidental deaths (228) decreased (11%) from 1998-99 (256). The number of deaths with cocaine present (alone or in combination with other drugs) was 95, 9% lower than in 1998-99 (104). The number of deaths with heroin present (115), measured as morphine, decreased 9% from 104 in 1998-99. PCP was present in no accidental deaths. Accidental deaths in which amphetamines were present (18) were decreased 22% from the number in 1998-99 (23).

TABLE XIII. ACCIDENTAL DEATH SITUATIONS BY RACE

			Race		
Method	**White**	**Black**	**Asian**	**Other**	**Total**
Asphyxia/Suffocation	9 (75%)	1 (8%)	2 (17%)	0 (0%)	**12**
Aspiration	5 (71%)	1 (14%)	1 (14%)	0 (0%)	**7**
Burns	3 (43%)	1 (14%)	2 (29%)	1 (14%)	**7**
Drowning	3 (38%)	1 (12%)	3 (38%)	1 (12%)	**8**
Drug Reaction	5 (56%)	2 (22%)	2 (22%)	0 (0%)	**9**
Drug/Alc. Abuse Related	12 (63%)	6 (32%)	1 (5%)	0 (0%)	**19**
Drug/Poison Caused	107 (71%)	34 (23%)	3 (2%)	6 (4%)	**150**
Falls	37 (76%)	1 (2%)	10 (20%)	1 (2%)	**49**
Hanging	1 (50%)	1 (50%)	0 (0%)	0 (0%)	**2**
Head Trauma	2 (100%)	0 (0%)	0 (0%)	0 (0%)	**2**
Medical Misadventure	4 (50%)	2 (25%)	2 (25%)	0 (0%)	**8**
Smoke/CO Inhalation	1 (25%)	0 (0%)	0 (0%)	3 (15%)	**4**
Other	3 (75%)	1 (25%)	0 (0%)	0 (0%)	**4**
TOTALS	**192 (68%)**	**51 (18%)**	**26 (9%)**	**12 (4%)**	**281**

NOTE: Row percentages refer to percentages by race for each mode. These can be compared to total percentages for each race to see whether a mode is more or less prevalent in a racial group. For instance, deaths from falls appear to occur *more* frequently in Asians (20%) than the general involvement of Asians in accidental deaths (9%). Deaths from falls occur *less* frequently in Blacks (2%) than would be anticipated, based on the overall involvement of Blacks in accidental deaths (18%).

RACE OF NON-VEHICULAR ACCIDENT VICTIMS

FISCAL YEAR 1999-2000

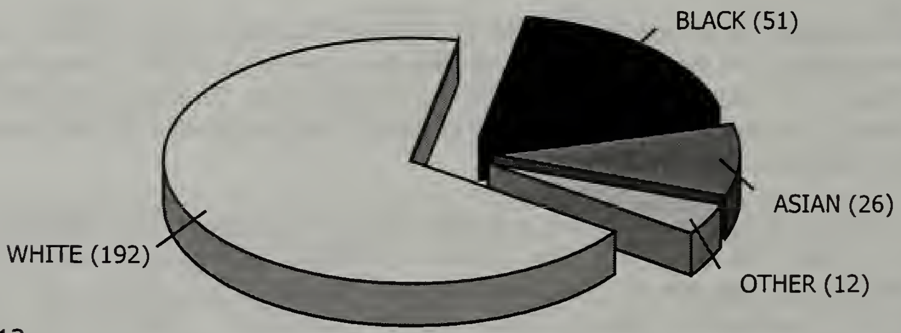


Figure 13.

AGE OF ACCIDENTAL DEATH VICTIMS

FISCAL YEAR 1999-2000

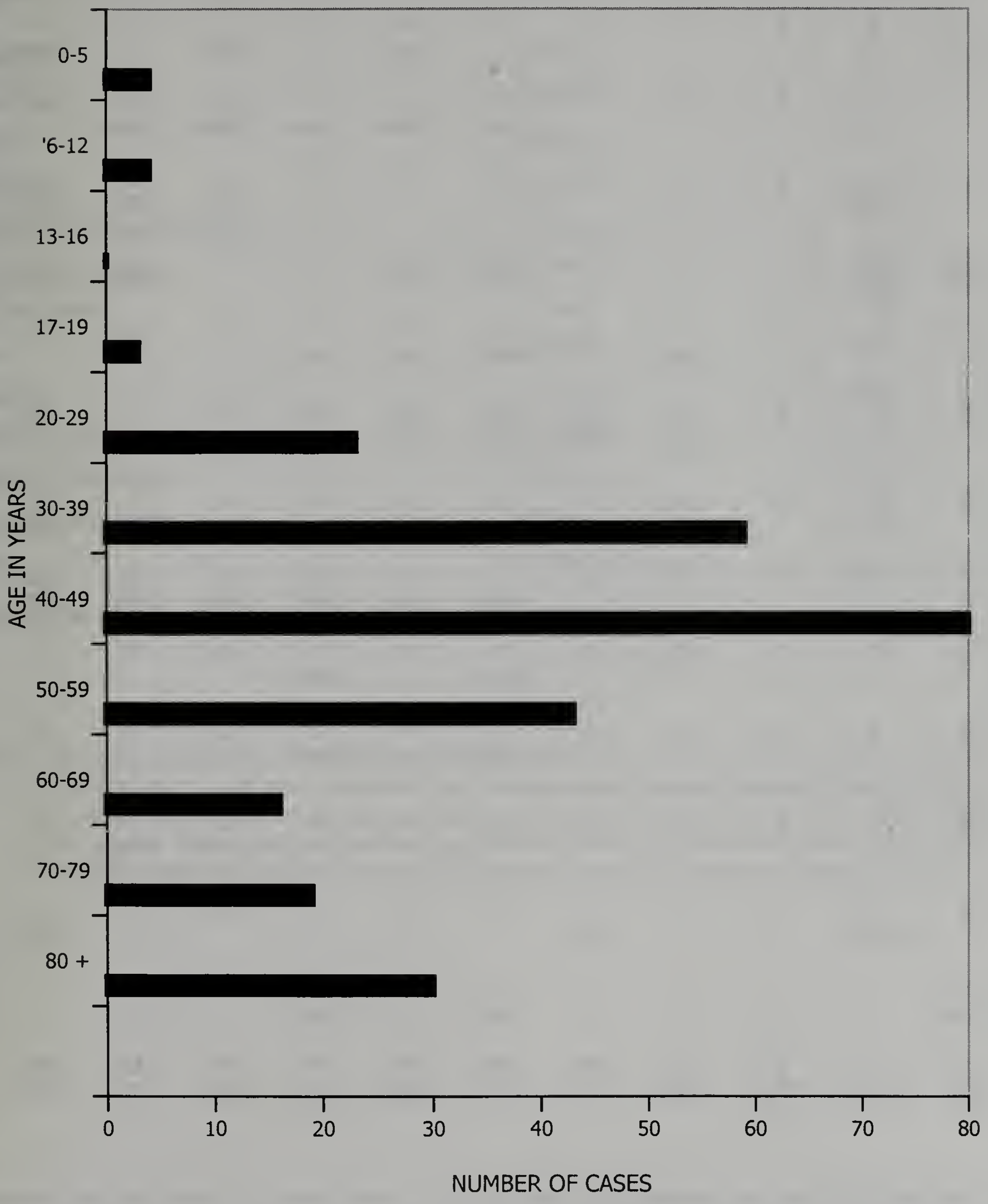


Figure 14.

TABLE XIV. ACCIDENTAL DEATH SITUATIONS BY AGE

	Age Range - Years										
Method	**0-5**	**6-12**	**13-16**	**17-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80+**	**Ave. Age**
Asphyxia	2 (17%)	0	0	0	0	0	4 (33%)	0	1 (8%)	0	5 (42%)	57.8
Aspiration	0	0	0	0	0	1 (14%)	2 (29%)	1 (14%)	2 (29%)	1 (14%)	0	53.4
Burns	0	1 (14%)	0	0	0	0	0	0	1 (14%)	3 (43%)	2 (29%)	69.1
Drowning	1 (12%)	1 (12%)	0	0	0	1 (12%)	2 (25%)	0	0	1 (12%)	2 (25%)	47.3
Drug/Alc. Abuse Rel.	0	0	0	1 (5%)	0	6 (32%)	10 (53%)	2 (11%)	0	0	0	40.1
Drug/Poison Caused	0	0	0	2 (1%)	21 (14%)	43 (29%)	55 (37%)	25 (17%)	3 (2%)	1 (0.6%)	0	41.0
Drug React.	0	0	0	0	1 (11%)	1 (11%)	1 (11%)	0	2 (22%)	2 (22%)	2 (22%)	60.9
Falls	0	0	0	0	0	3 (6%)	4 (8%)	9 (18%)	5 (10%)	10 (20%)	18 (37%)	70.1
Hanging	0	0	0	0	0	1 (50%)	0	1 (50%)	0	0	0	46.0
Head Trauma	0	0	0	0	0	1 (50%)	0	1 (50%)	0	0	0	42.0
Medical Misadvent.	0	0	0	0	0	0	2 (25%)	3 (38%)	2 (25%)	1 (12%)	0	57.1
Smoke/CO Inhalation	0	2 (50%)	0	0	1 (25%)	0	0	0	0	0	1 (25%)	31.0
Other	1 (25%)	0	0	0	0	2 (50%)	0	1 (25%)	0	0	0	31.0
TOTALS **% Of Total**	**4** **(1%)**	**4** **(1%)**	**0** **(0%)**	**3** **(1%)**	**23** **(8%)**	**59** **(21%)**	**80** **(28%)**	**43** **(15%)**	**16** **(6%)**	**19** **(7%)**	**30** **(11%)**	**48.8**

NOTE: Row percents refer to percentage by age range for each mode. These can be compared to t percentages for each age range to see if a mode is more or less prevalent in an age group. For examp drowning occurred *more* frequently in the 0-12 year age group (24%) than the general involvement of age group in accidents (2%) while falls in the 30-39 year age group occurred *less* frequently (6%) than accidents in this age group (21%). Falls in the age group 60-80+ occurred *more* frequently (68%) than accidents in this age group (24%).

TABLE XV. ACCIDENTAL DEATH SITUATIONS BY SEX

Method	Sex Male	Female
Asphyxia	4 (33%)	8 (67%)
Aspiration	4 (57%)	3 (43%)
Burns	2 (29%)	5 (71%)
Drowning	5 (62%)	3 (38%)
Drug/Alcohol Abuse Related	11 (58%)	8 (42%)
Drug/Poison Caused	125 (83%)	25 (17%)
Drug Reactions	6 (67%)	3 (33%)
Falls	39 (80%)	10 (20%)
Hanging	2 (100%)	0 (0%)
Head Trauma	2 (100%)	0 (0%)
Medical Misadventure	4 (50%)	4 (50%)
Smoke/CO Inhalation	3 (75%)	1 (25%)
Other	3 (75%)	1 (25%)
TOTALS (% of Total)	**210 (75%)**	**71 (25%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths from drugs/poisons appear to occur more frequently in males (83%) than the general involvement of males in accidental deaths (75%) while deaths from burns occurred more frequently in females (71%) than all accidental deaths in females (25%).

VEHICULAR DEATHS

In 1999-2000, there were 72 vehicular fatalities in San Francisco, an increase of 12 (20%) from 1998-1999. The number of such fatalities by type is indicated in Figure 15, page 34 and Table XV, page 35. Percentages of all vehicular fatalities by type are shown in Table XV, page 35. The largest number of vehicular fatalities involved pedestrians; the second largest number involved automobile drivers. Pedestrian fatalities have increased by 7 (22%) from 32 in 1998-99 to 39 in 1999-2000.

Of the vehicular fatalities tested for alcohol (i.e., those in the hospital for less than 24 hours), auto drivers had the highest average blood ethyl alcohol concentration (0.22%).

Abuse Drug Involvement (Table XVII, page 35)

Cocaine was the abuse drug seen most frequently in vehicular fatalities (6 times). The number of times abuse drugs were found in vehicular fatalities was 8 in 1999-2000, 3 in 1998-99, 6 in 1997-98, 12 in 1996-97, 3 in 1995-96, 4 in 1994-95, 5 in 1993-94, and 10 in 1991-92.

Age Distribution (Table XVIII, page 36, Table XIX, page 37, and Figure 16, p. 36)

Deaths of auto drivers in the 50-69 year age group occurs more frequently (42%) than the general involvement of this age group in vehicular fatalities (22%). It should be noted that in 4 of the 39 pedestrian deaths, the victims were run over by their own car after they had exited the still running vehicle!

Distribution by Sex (Table XIX, page 37)

Overall, Males were the predominant victims of vehicular fatalities (60%).

Racial Distribution (Table XIX and Figure 17, page 37)

Overall, vehicular fatalities occur most frequently in white non-Hispanics (49%). Blacks were represented more heavily among deaths of auto passengers (67%) than would be expected by their involvement in all vehicular fatalities (12%).

VEHICULAR DEATHS

In San Francisco, there were 72 vehicle-related fatalities (58 accidents, 11 homicides, and 3 suicides) accounting for 4.7% of the Medical Examiner death investigations for the fiscal year 1999-2000.

TYPES OF VEHICULAR DEATHS

FISCAL YEAR 1999-2000

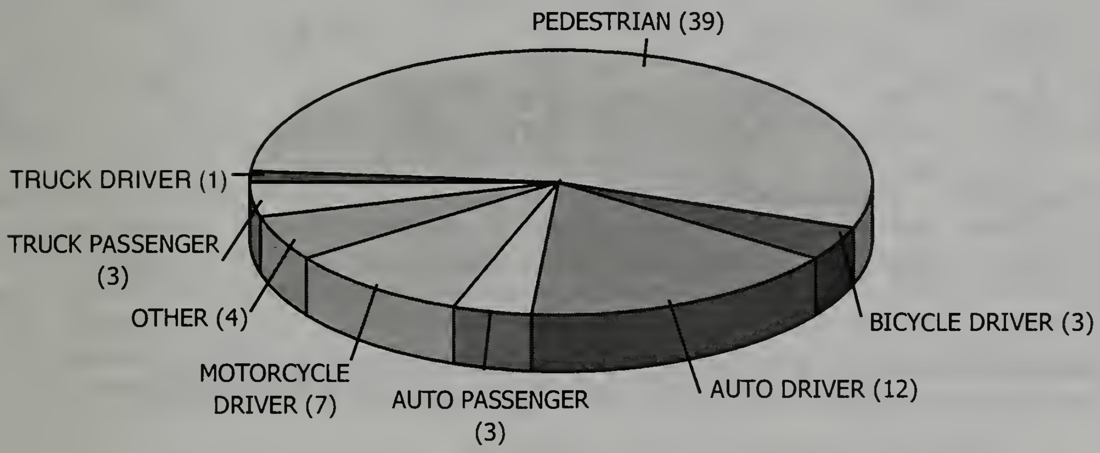


TABLE XVI. VEHICULAR FATALITIES IN 1999-2000

Drug and Alcohol Involvement

Method	Numbei	% W/ Alc.*	# Positive (# Tested)	Ave. Alc. Conc. (g%)	% With Drugs**	# Positive (# Tested)	% W/ Drugs & Alcohol	# Positive (# Tested)
Pedestrian	39 (54%)	20%	7 (of 35)	0.20	20%	5 (of 25)	12%	3 (of 25)
Auto Driver	12 (17%)	12%	1 (of 8)	0.22	0%	0 (of 7)	0%	0 (of 7)
Auto Passenger	3 (4%)	0%	0 (of 3)	-	50%	1 (of 2)	0%	0 (of 2)
Truck Driver	1 (1%)	0%	0 (of 1)	-	0%	0 (of 1)	0%	0 (of 1)
Truck Passenger	3 (4%)	50%	1 (of 2)	0.16	100%	1 (of 1)	100%	1 (of 1)
Motorcycle Driver	7 (10%)	25%	1 (of 4)	0.07	25%	1 (of 4)	25%	1 (of 4)
Bicycle Driver	3 (4%)	0%	0 (of 3)	-	0%	0 (of 3)	0%	0 (of 3)
Other	4 (6%)	0%	0 (of 4)	-	0%	0 (of 3)	0%	0 (of 3)
TOTALS	**72**	**17%**	**10** **(of 60)**	-	**17%**	**8** **(of 46)**	**11%**	**5** **(of 46)**

* Refers to percentages of victims (of those tested) with positive blood ethyl alcohol levels.
** Refers to percentage of victims (of those tested) with positive blood tests for abuse drugs.

TABLE XVII. ABUSE DRUGS PRESENT IN VEHICULAR FATALITIES

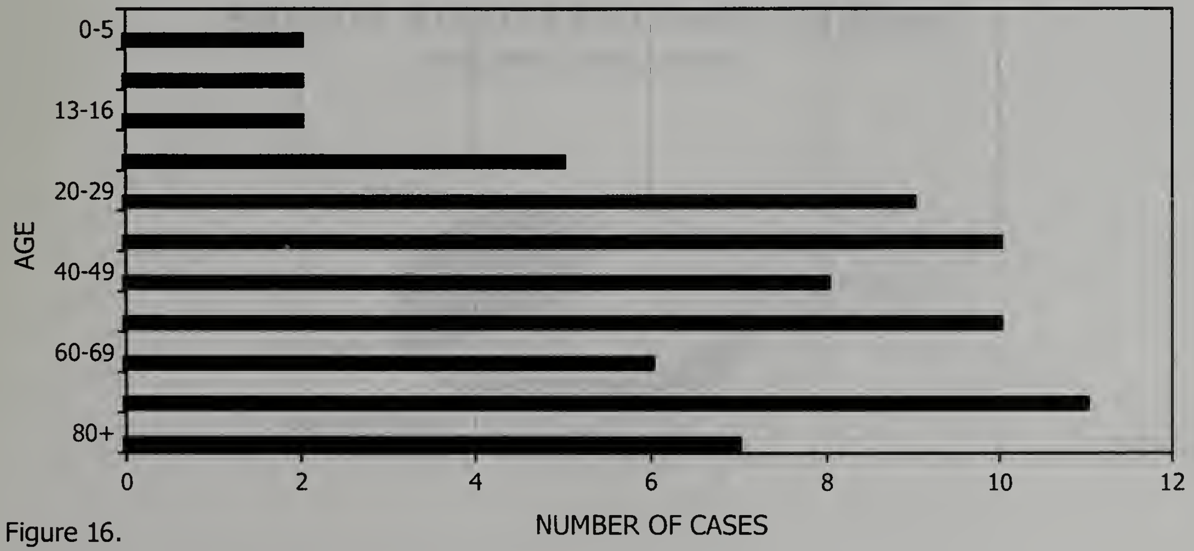
Drugs

Situation	Cocaine	PCP	Heroin	Amphetamines
Pedestrian	4	0	0	1
Auto Driver	0	0	0	0
Auto Passenger	1	0	0	0
Truck Driver	0	0	0	0
Truck Passenger	1	0	0	0
Motorcycle Driver	0	0	0	1
Bicycle Driver	0	0	0	0
Other	0	0	0	0
TOTALS	**6**	**0**	**0**	**2**

TABLE XVIII. VEHICULAR FATALITIES BY AGE

	Age Range - Years										
Situation	**0-5**	**6-12**	**13-16**	**17-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80+**
Pedestrian	2	2	1	1	3	5	5	5	2	7	6
	(5%)	(5%)	(3%)	(3%)	(8%)	(13%)	(13%)	(13%)	(5%)	(18%)	(15%)
Auto Driver	0	0	0	3	1	1	0	2	3	2	0
	(0%)	(0%)	(0%)	(25%)	(8%)	(8%)	(0%)	(17%)	(25%)	(17%)	(0%)
Auto Passenger	0	0	1	0	1	0	0	0	1	0	0
	(0%)	(0%)	(33%)	(0%)	(33%)	(0%)	(0%)	(0%)	(33%)	(0%)	(0%)
Truck Driver	0	0	0	0	1	0	0	0	0	0	0
	(0%)	(0%)	(0%)	(0%)	(100%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)
Truck Passenger	0	0	0	0	1	1	0	0	0	1	0
	(0%)	(0%)	(0%)	(0%)	(33%)	(33%)	(0%)	(0%)	(0%)	(33%)	(0%)
Motorcycle Driver	0	0	0	1	2	2	1	1	0	0	0
	(0%)	(0%)	(0%)	(14%)	(29%)	(29%)	(14%)	(14%)	(0%)	(0%)	(0%)
Bicycle Driver	0	0	0	0	0	1	1	1	0	0	0
	(0%)	(0%)	(0%)	(0%)	(0%)	(33%)	(33%)	(33%)	(0%)	(0%)	(0%)
Other	0	0	0	0	0	0	1	1	0	1	1
	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(25%)	(25%)	(0%)	(25%)	(25%)
TOTALS	**2**	**2**	**2**	**5**	**9**	**10**	**8**	**10**	**6**	**11**	**7**
% Of Totals	**(3%)**	**(3%)**	**(3%)**	**(7%)**	**(12%)**	**(14%)**	**(11%)**	**(14%)**	**(8%)**	**(15%)**	**(10%)**

NOTE: Row percents refer to percentages by age group for each situation. These can be compared to total percentages for each age group to see if a situation is more or less prevalent in an age group. For example, deaths of motorcycle drivers in the 20-29 year age group occur *more* frequently (29%) than the general involvement of this age group in vehicular fatalities (12%). Also, deaths of auto drivers in the 17-19 year age group occurred more frequently (25%) than the general involvement of this age group in vehicular fatalities (7%). Auto driver fatalities are more prevalent in the 60+ age group (42%) than the general involvement of this age group in all vehicular fatalities (33%).



VEHICULAR DEATHS BY AGE

FISCAL YEAR 1999-2000

Figure 16.

TABLE XIX. DEMOGRAPHICS OF VEHICULAR FATALITIES

	Sex		Race					Age
Situation	**M**	**F**	**W-NH**	**W-H**	**B-NH**	**A**	**O/Unk**	**Average**
Pedestrian	19 (49%)	20 (51%)	19 (49%)	2 (5%)	5 (13%)	12 (31%)	1 (3%)	50
Auto Driver	7 (58%)	5 (42%)	4 (33%)	1 (8%)	2 (17%)	4 (33%)	1 (8%)	46
Auto Passenger	1 (33%)	2 (67%)	1 (33%)	0 (0%)	2 (67%)	0 (0%)	0 (0%)	33
Truck Driver	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)	27
Truck Passenger	2 (67%)	1 (33%)	1 (33%)	2 (67%)	0 (0%)	0 (0%)	0 (0%)	46
Motorcycle Driver	7 (100%)	0 (0%)	5 (71%)	1 (14%)	0 (0%)	1 (14%)	0 (0%)	35
Bicycle Driver	3 (100%)	0 (0%)	3 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	46
Other	3 (75%)	1 (25%)	2 (50%)	1 (25%)	0 (0%)	1 (25%)	0 (0%)	63
Average **Average %**	**43** **(60%)**	**29** **(40%)**	**35** **(49%)**	**7** **(10%)**	**9** **(12%)**	**19** **(26%)**	**2** **(3%)**	**47**

NOTE: Row percentages refer to percentage by demographic characteristics for each situation. These can be compared to total percentage for each characteristic to see whether a situation is more or less prevalent in any one characteristic. For example, accidental deaths of motorcycle drivers occur *more* frequently in males (100%) than the general involvement of males in vehicular fatalities (60%). Also, deaths of automobile passengers occur *more* frequently in blacks (67%), than the general involvement of blacks in vehicular fatalities (12%). The average age of all types of vehicular fatalities is decreased from the previous fiscal year.

RACE OF VEHICULAR DEATH VICTIMS

FISCAL YEAR 1999-2000

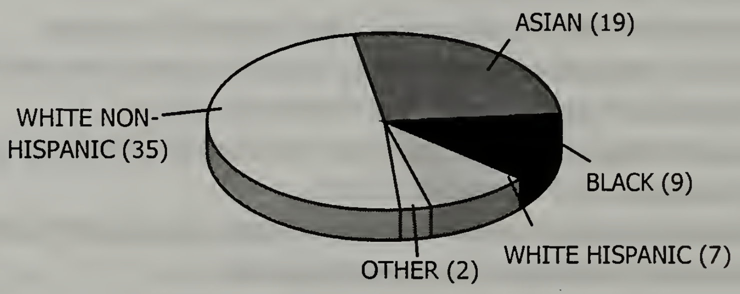


Figure 17.

SUICIDES

The determination of suicide as a manner of death represents the summation of scene investigation, including a review of psychological state, autopsy, pathology, toxicology and, frequently, other investigation. To the best of our knowledge, ours is the only Medical Examiner's Office routinely performing toxicology testing on multiple organs and/or body fluids in order to evaluate the metabolic status of a drug or drugs.

Realizing the immense emotional impact on family, the diagnosis of suicide is never made lightly, and always represents a decision made on the basis of data sufficient to defend that decision in a court of law, if necessary. Should these data be inconclusive, the victim automatically gets the benefit of the doubt.

Suicide takes a tremendous toll oN our young people. The relative number jumping from the Golden Gate Bridge would not seem to warrant the publicity assigned them as compared to the evident need for help for individuals using other methods.

To help understand the problem, and hopefully, to aid in reduction of suicides, this office has supported suicide prevention and research programs for many years. It is hoped that this work will help to reduce this needless loss.

The majority of these deaths are situation reactions, and if given momentary trained support, are potentially preventable.

SUICIDAL DEATHS

One hundred and one (101) deaths were ruled to have been due to suicide during the 1999-2000 fiscal year and are the basis for the tabulations in this Section. The number of individuals dying by each method of suicide are presented in Figure 18, page 41, and Table XX, page 42, and the percentages of all suicidal deaths by type are indicated in Table IX, page 42, along with alcohol and drug involvement for each mode.

Abuse Drug Involvement (Table XXI, page 42)

Abuse drugs were present 20 times in suicidal deaths in 1999-2000 as compared to 8 times in 1998-99 and 19 times in 1997-98. The abuse drugs seen most frequently in suicidal deaths were cocaine (10 times) and heroin (8 times). Amphetamines were found in 2 cases of suicidal death in 1999-2000. Abuse drugs were associated more frequently with deaths caused by drug overdose than with any other means of suicide.

Racial Distribution (Table XXII and Figure 19, page 43)

Deaths from suicide occurred most frequently in whites (74% of total suicides). The white racial group has been divided into Hispanic and non-Hispanic in this tabulation. It can be seen that the white non-Hispanic group was involved in 64% of all suicides but in 75% of all suicides by drug overdose. Two-thirds of suicide deaths in Blacks were due to drugs and 60% of suicidal deaths in white Hispanics were due to firearms.

Age Distribution (Table XXIII, page 44, Table XXIV, page 45 and Figure 20, page 45)

There were no deaths by suicide in the 13-16 year or 17-19 years age groups during this fiscal year. The 40-49 year age group had the highest number of suicides of any age group with deaths from drug overdoses and firearms constituting more than 50% of the total.

Distribution by Sex (Table XXV, page 46)

Males were more likely than females to commit suicide in 1999-2000 (79% male, 21% female).

SUICIDES

Suicides are self-inflicted deaths. In San Francisco, the 101 suicides which are being tabulated account for 6.7% of the Medical Examiner death investigations for the fiscal year of 1999-2000.

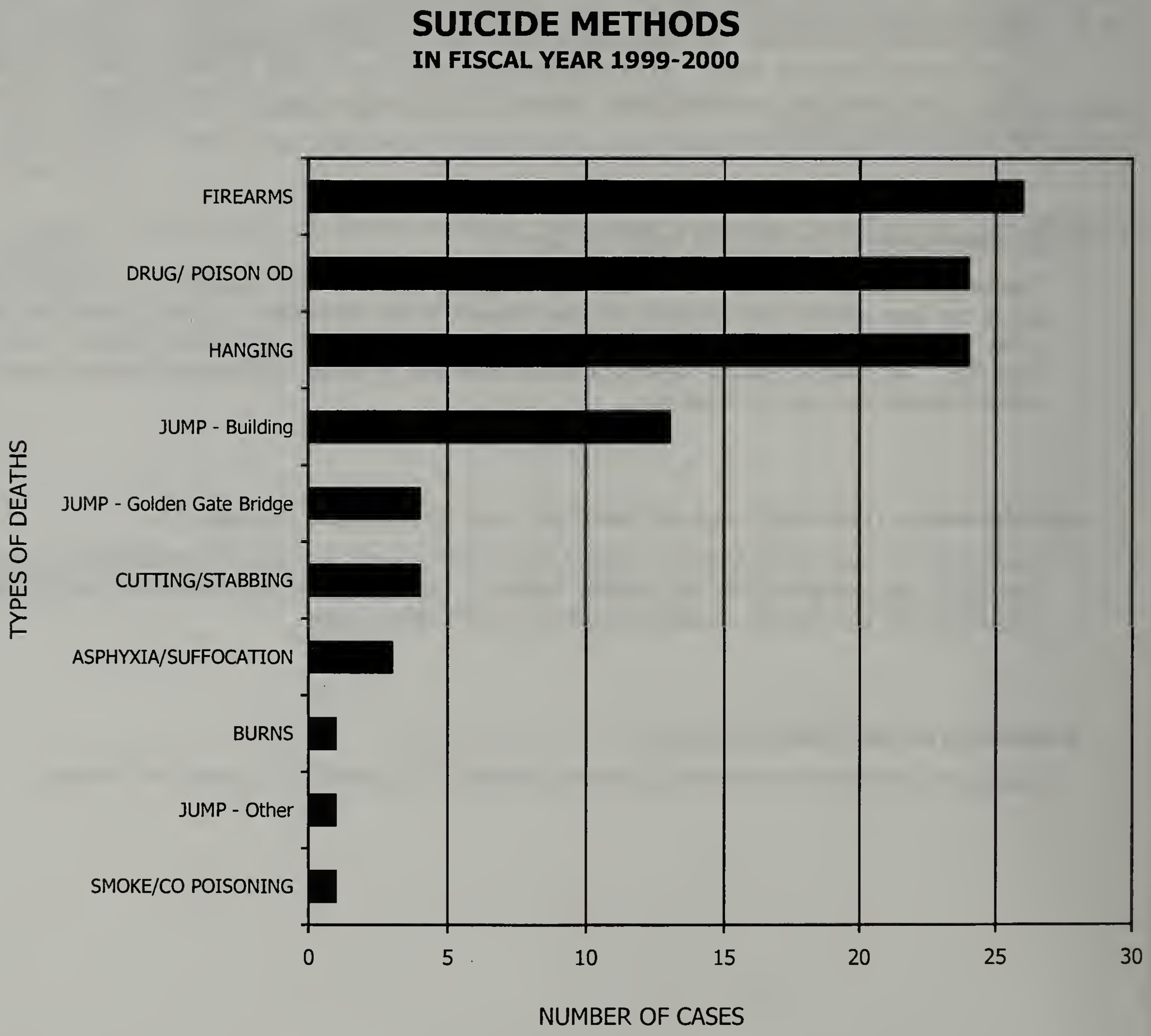


Figure 18.

TABLE XX. SUICIDAL DEATHS BY MODE

Abuse Drug and Alcohol Involvement

lethod	Number	% Of Total Suicides	% With Alcohol	# Positive (# Tested)	Ave. Alc. Conc. (g%)	% W/ Abuse Drugs	# Positive (# Tested)
sphyxia/Suffocation	3	3.0	33	1 (of 3)	0.05	33	1 (of 3)
urns	1	1.0	0	0 (of 1)	-	0	0 (of 1)
utting/Stabbing	4	4.0	50	2 (of 4)	0.22	0	0 (of 4)
rug/Poison OD	24	23.8	50	12 (of 24)	0.16	33	8 (of 24)
irearms	26	25.7	20	5 (of 25)	0.13	11	2 (of 19)
langing	24	23.8	23	5 (of 22)	0.09	15	3 (of 20)
ump - Building	13	12.9	18	2 (of 11)	0.28	18	2 (of 11)
ump - G. G. Bridge	4	4.0	0	0 (of 3)	-	0	0 (of 3)
ump - Other	1	1.0	100	1 (of 1)	0.22	0	0 (of 0)
moke/CO Poisoning	1	1.0	100	1 (of 1)	0.04	0	0 (of 1)
OTALS	**101**	**100**	**31**	**29** **(of 95)**	**0.15**	**19**	**16** **(of 86)**

TABLE XXI. ABUSE DRUGS PRESENT IN SUICIDAL DEATHS

Drugs

ituation	Cocaine	PCP	Heroin	Amphetamines
sphyxia/Suffocation	1	0	1	0
urns	0	0	0	0
utting/Stabbing	0	0	0	0
rug/Poison Overdose	5	0	6	0
irearms	2	0	0	0
langing	0	0	1	2
ump - Building	2	0	0	0
ump - Golden Gate Bridge	0	0	0	0
ump - Other	0	0	0	0
moke/CO Poisoning	0	0	0	0
OTALS	**10**	**0**	**8**	**2**

TABLE XXII. SUICIDE METHODS BY RACE

	Race					
Method	**W-NH**	**W-H**	**B-NH**	**ASIAN**	**OTHER**	**TOTALS**
Asphyxia/Suffocation	2 (67%)	0 (0%)	0 (0%)	1 (33%)	0 (0%)	**3**
Burns	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	**1**
Cutting/Stabbing	2 (50%)	0 (0%)	0 (0%)	2 (50%)	0 (0%)	**4**
Drug/Poison Overdose	18 (75%)	2 (8%)	2 (8%)	2 (8%)	0 (0%)	**24**
Firearms	15 (58%)	6 (23%)	0 (0%)	5 (19%)	0 (0%)	**26**
Hanging	13 (54%)	1 (4%)	0	10 (42%)	0 (0%)	**24**
Jump - Building	9 (69%)	0 (0%)	1 (8%)	3 (23%)	0 (0%)	**13**
Jump - Golden Gate Bridge	3 (75%)	0 (0%)	0 (0%)	1 (25%)	0 (0%)	**4**
Jump - Other	0 (0%)	1 (100%)	0 (0%)	0 (0%)	0 (0%)	**1**
Smoke/CO Poisoning	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	**1**
TOTAL NUMBER **% OF TOTALS**	**64** **(63%)**	**10** **(10%)**	**3** **(3%)**	**24** **(24%)**	**0** **(0%)**	**101**

NOTE: Row percentages refer to percentages by race for each method. These can be compared to total percentages for each race to see whether a method is more or less prevalent in a racial group. For instance, suicides by cutting/stabbing appear to occur *more* frequently in Asians (50%) than the general involvement of Asians in suicides (24%), and deaths by firearms in white Hispanics (23%) occur *more* frequently than all suicides in white Hispanics (10%).

RACE OF SUICIDE VICTIMS
FISCAL YEAR 1999-2000

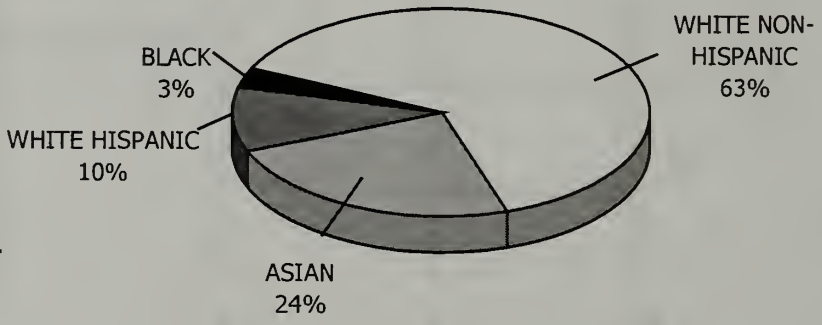


Figure 19.

TABLE XXIII. SUICIDE METHODS BY AGE

	Age Range - Years									
Method	**13-16**	**17-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80-89**	**90 +**
Asphyxia/Suffocation	0	0	0	1 (33%)	1 (33%)	1 (33%)	0	0	0	0
Burns	0	0	0	0	0	1 (100%)	0	0	0	0
Cutting/Stabbing	0	0	0	0	1 (25%)	1 (25%)	0	1 (25%)	1 (25%)	0
Drug/Poison Overdose	0	0	2 (8%)	3 (12%)	9 (38%)	3 (12%)	3 (12%)	2 (8%)	2 (8%)	0
Firearms	0	0	6 (23%)	2 (8%)	8 (31%)	3 (12%)	4 (15%)	0	2 (8%)	1 (4%)
Hanging	0	0	7 (29%)	2 (8%)	4 (17%)	4 (17%)	3 (12%)	2 (8%)	2 (8%)	0
Jump - Building	0	0	4 (31%)	0	0	2 (15%)	3 (23%)	0	3 (23%)	1 (8%)
Jump - G. G. Bridge	0	0	0	3 (75%)	0	1 (25%)	0	0	0	0
Jump - Other	0	0	0	1 (100%)	0	0	0	0	0	0
Smoke/CO Poisoning	0	0	0	0	0	1 (100%)	0	0	0	0
TOTAL NUMBER **% OF TOTAL**	**0** **(0%)**	**0** **(0%)**	**19** **(19%)**	**12** **(12%)**	**23** **(23%)**	**17** **(17%)**	**13** **(13%)**	**5** **(5%)**	**10** **(10%)**	**2** **(2%)**

NOTE: Row percents refer to percentage by age range for each method. These can be compared to total percentages for each age range to see if a method is more or less prevalent in an age group. For example, death by jumps from buildings appears to occur *more* frequently in the 80-89 years of age group (23%) than the general involvement of this age group in suicides (10%), while deaths by drug/poison overdose in the 20-29 year age group (8%) occur *less* frequently than suicides by all means in this age group (19%).

SUICIDES

TABLE XXIV. AGE RANGES - COMPARISON BY YEAR*

Age Range Years	90-'91	91-'92	92-'93	93-'94	94-'95	95-'96	96-'97	97-'98	98-'99	99-'00
0 - 19	2	6	2	5	3	5	6	3	2	0
20 - 29	20	28	14	30	18	21	22	14	18	19
30 - 39	37	34	32	31	29	27	28	22	19	12
40 - 49	23	30	36	20	27	39	35	24	25	23
50 - 59	29	14	13	23	18	29	11	12	6	17
60 - 69	15	12	12	12	11	13	7	15	4	13
70 - 79	19	17	14	7	9	14	16	8	7	5
80 - 89	8	9	8	7	7	7	9	7	8	10
90 - 99	1	3	1	1	2	1	5	6	1	2
Unknown	0	0	0	0	0	0	0	0	0	0
TOTALS	**154**	**153**	**132**	**136**	**124**	**156**	**139**	**111**	**90**	**101**

* Totals do not include vehicular deaths ruled to be suicide.

SUICIDE VICTIMS BY AGE
FISCAL YEAR 1999-2000

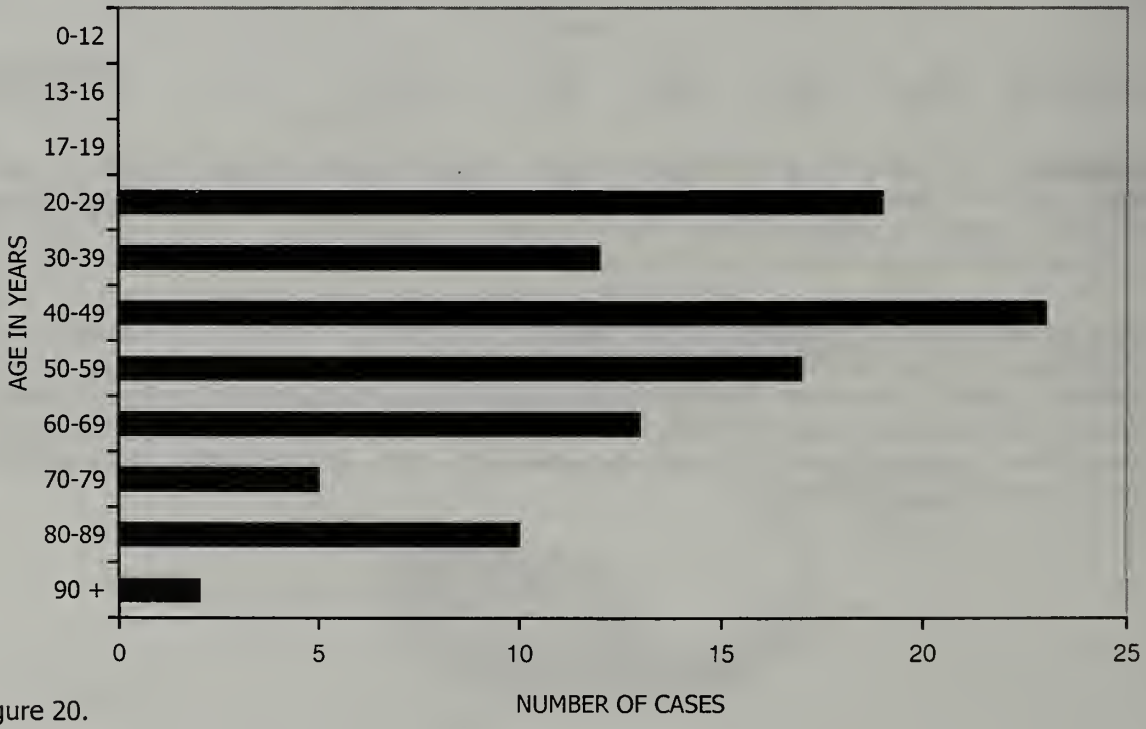


Figure 20.

TABLE XXV. SUICIDE METHODS BY SEX

Method	Sex			
	Male		Female	
Asphyxia/Suffocation	3	(100%)	0	(0%)
Burns	1	(100%)	0	(0%)
Cutting/Stabbing	3	(75%)	1	(25%)
Drug/Poison Overdose	18	(75%)	6	(25%)
Firearms	23	(88%)	3	(12%)
Hanging	18	(75%)	6	(25%)
Jump - Building	9	(69%)	4	(31%)
Jump - Golden Gate Bridge	3	(75%)	1	(25%)
Jump - Other	1	(100%)	0	(0%)
Smoke/CO Poisoning	1	(100%)	0	(0%)
TOTALS	**80**	**(79%)**	**21**	**(21%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths by firearms appear to occur *more* frequently in males (88%) than the general involvement of males in suicides (79%), while females die by jumping from buildings *more* frequently (31%) than all suicides in females (21%).

HOMICIDE

Homicide is the killing of one human being by another. Murder is the unlawful killing of a human being with malice. The following data do not differentiate homicide as to whether it was justifiable, accidental, or murder. Such distinctions are the proper function of the judicial system and are not the responsibility or function of this office.

Any judicial system which deals with crimes involving death requires a well-trained staff and well-equipped Medical Examiner's Office which can and will interpret forensic findings in an unbiased, fair manner. Their investigation must be intense, accurate and rapid enough so that charges may be pursued or dismissed without unfairly affecting an individual's constitutional rights. That is the purpose of this office.

The proper evaluation and investigation of a homicide begins, naturally, at the scene. In the majority of cases, a staff member of this office (either the Investigator, Medical Examiner's Administrator, or Medical Examiner), determines whether a death is potentially a homicide. It has been well-documented that if such a determination is made by an individual inexperienced or untrained in death investigation, his opinion will be wrong in 50% of the cases. Such a person is very apt to miss the subtle homicide and is more inclined to miscall a natural or accidental death as homicide, resulting in false arrest, false accusations, needless expenditure of public funds, waste of investigative time, and delay in the investigation of other deaths.

The Investigator responds to the scene of death and determines whether the Police Homicide Detail will be called. When homicide is obvious, the Investigator responds as part of a team (other members include homicide investigators, photographers and criminologists). This office is responsible for the body, identification, inquiry into circumstances, manner and means of death (Gov. Code 27491.2). In addition to the scene investigation, the Investigator is responsible for recovering property, locating and notifying next of kin, and preparing a written summary of his/her investigation.

In about one-third to one-half of all homicides, a forensic pathologist will respond to the scene to aid in the investigation. The subsequent autopsy may also use photography, fluoroscopy, X-ray, angiography and other techniques to establish and define the number, nature and severity of wounds, to obtain evidence (i.e., bullets) and to prepare an official report. This report, including chemistry, serology and toxicology results, is used as part of the prosecution or defense of the case in the formal judicial hearing.

Pertaining to criminal trial, our judicial system requires identification of an individual and presentation of evidence, usually by virtue of expert testimony, relative to the cause of death or trauma associated with death. The Medical Examiner's Office identifies the body, frequently relying on local police, CII, or FBI fingerprints. Expert forensic testimony is given by the Forensic Pathologist from this office. In addition, the Forensic Toxicologist is frequently called upon to testify on the significance and effect of various drug levels, a matter of great importance when dealing with the concept of diminished capacity.

Of minor, but increasing importance, is the fact we are seeing more homicide and trauma cases transferred into the County for medical therapy because of San Francisco's excellent and advanced medical facilities. Should these individuals die, the autopsy and court testimony are done by this office.

HOMICIDE DEATHS

Seventy-one (71) deaths were ruled to have been due to homicide during the 1999-2000 fiscal year. Of these, 11 were vehicular homicides and have been discussed in the "Vehicular Deaths" section. The remaining 60 homicide deaths are the basis for the tabulations in this section. The numbers of individuals dying by each manner of death are indicated in Figure 21, page 49 and Table XXVI, page 50; percentages of all homicides represented by specific methods are indicated in Table XXVI, page 50. Of the homicide victims tested for alcohol and drugs (those in the hospital for less than 24 hours), about one-fourth had positive blood alcohol levels; more than one-third had drugs present. The percent of homicide victims with positive blood tests for drugs varied with the method of homicide with 75% of those dying by stabbing having drugs present.

Abuse Drug Involvement (Table XXVII, page 50)

Cocaine was the abuse drug seen most frequently in homicide victims, being present in 16 homicide cases, the same number as in 1998-99. Cocaine was associated most strongly with deaths by gunshot wound, with 8 of the 16 cases with cocaine present (50%) being deaths due to gunshot wounds. Stabbing was the homicide method which was associated with drugs next most frequently. Overall, the number of times abuse drugs were found to be present in homicide cases increased 18% from 22 in 1998-99 to 26 in 1999-2000.

Racial Distribution (Table XXVIII and Figure 22, page 51)

Deaths by homicide occurred more frequently in blacks (38%) than in whites (37%). The percentage of homicides in white Hispanics increased from 8% to 17% from the previous fiscal year. Deaths resulting from firearms accounted for 70% of all homicides in white Hispanics, 83% of homicides in blacks and 50% of homicides in white non Hispanics.

Age Distribution (Figure 23, page 52, Tables XXIX and XXX, page 53 and Table XXXII, page 54)

There were 9 homicides in the 0-19 year age group, an increase of 80% from 1998-99. The number of homicide deaths in the 20-39 year age group increased by 7 (26%) from 1998-99 but is the second lowest number in this age group in the last thirteen fiscal years. Death by firearms accounted for 77% of the homicides in the 0-39 year age group in 1999-2000. In the previous fiscal year, firearm deaths accounted for 68% of homicides in this age group. The peak occurrence of deaths due to firearms was in the 20-29 year age group. As can be seen from Table XXXII, the mean age of homicide victims varies with the mode, with the lowest mean age for males being in deaths by firearms.

Distribution by Sex (Table XXXI, page 54)

Males were almost 4 times as likely as females to be homicide victims.

NON-VEHICULAR HOMICIDES

Homicides are those deaths caused by another person, generally resulting in murder and manslaughter charges. In San Francisco, 60 non-vehicular homicides occurred in 1999-2000, accounting for 4.0% of the total Medical Examiner investigations.

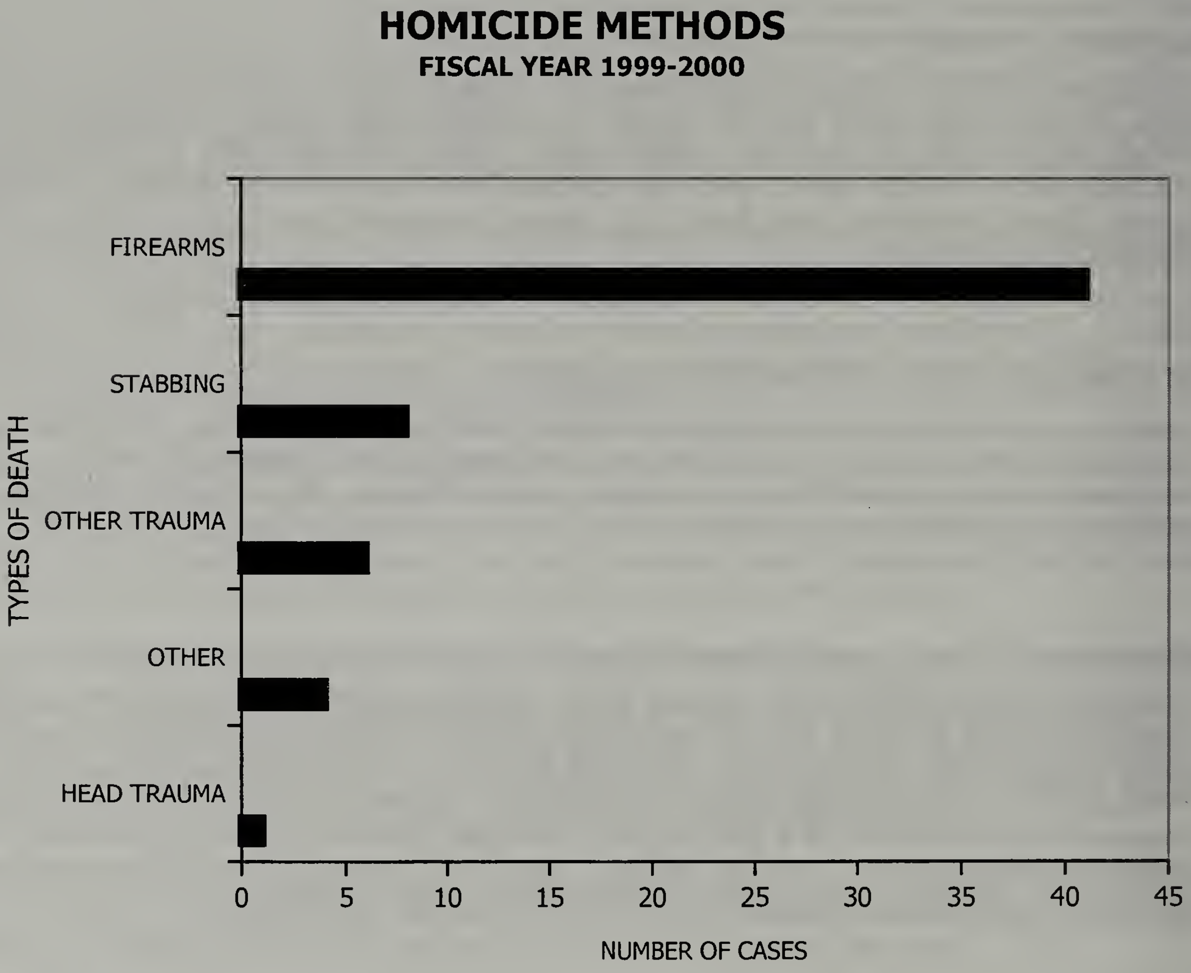


Figure 21.

TABLE XXVI. HOMICIDE DEATHS BY MODE

Abuse Drug and Alcohol Involvement

Method	Number	% Of Total Homicides	% With Alcohol *	# Positive (# Tested)	Ave. Alcohol Conc. (g%)	% With Drugs **	# Positive (# Tested)
Firearms	41	68	19	7 (of 37)	0.11	27	10 (of 37)
Stabbing	8	13	50	4 (of 8)	0.12	75	6 (of 8)
Other Trauma	6	10	33	2 (of 6)	0.17	60	3 (of 5)
Head Trauma	1	2	100	1 (of 1)	0.05	0	1 (of 1)
Other	4	7	0	0 (of 4)	-	25	1 (of 4)
TOTALS	**60**	**100**	**25**	**14** **(of 56)**	**0.12**	**38**	**21** **(of 55)**

* Refers to percentage of victims (of those tested) with positive blood ethyl alcohol concentrations.
** Refers to percentage of victims (of those tested) with positive blood tests for abuse drugs.

TABLE XXVII. DRUGS PRESENT IN NON-VEHICULAR HOMICIDE DEATHS

Drugs

ituation	Cocaine	PCP	Heroin	Amphetamines
unshot Wound	8	0	3	2
ead Injury	0	0	0	0
tabbing	5	0	2	2
raumatic Injuries	2	0	1	0
ther	1	0	0	0
OTALS	**16**	**0**	**6**	**4**

TABLE XXVIII. HOMICIDE METHODS BY RACE

	Race					
Method	**W-NH**	**W-H**	**B-NH**	**Asian**	**Other**	**TOTAL**
Firearms	6 (15%)	7 (17%)	19 (46%)	8 (20%)	1 (2%)	**41**
Head Trauma	0	0	0	1 (100%)	0	**1**
Other Trauma	2 (33%)	0	2 (33%)	2 (33%)	0	**6**
Stabbing	2 (25%)	3 (38%)	1 (12%)	2 (25%)	0	**8**
Other	2 (50%)	0	1 (25%)	0	1 (25%)	**4**
TOTALS **% OF TOTAL**	**12** **20%**	**10** **17%**	**23** **38%**	**13** **22%**	**2** **3%**	**60**

NOTE: Row percentages refer to percentages by race for each method. These can be compared to total percentages for each race to see whether a method is more or less prevalent in a racial group. For instance, death by stabbing appears to occur *less* frequently in Blacks (12%) than the general involvement of Blacks in homicides (38%) while deaths due to stabbing appear to occur *more* frequently in white Hispanics (38%) than all homicides in white Hispanics (17%).

RACE OF HOMICIDE VICTIMS

FISCAL YEAR 1999-2000

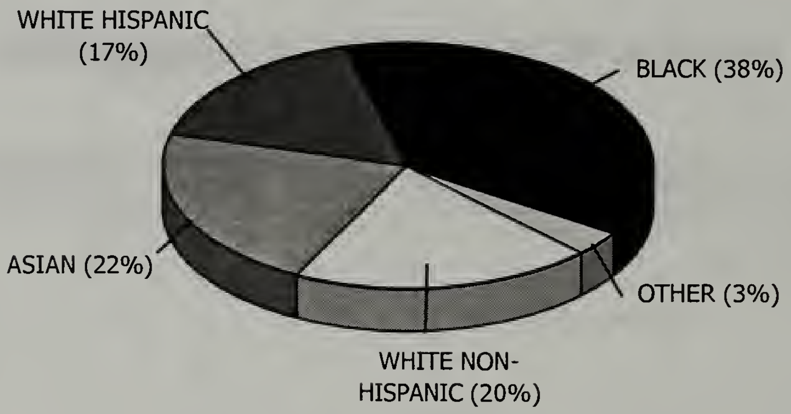


Figure 22.

HOMICIDE VICTIMS BY AGE

FISCAL YEAR 1999-2000

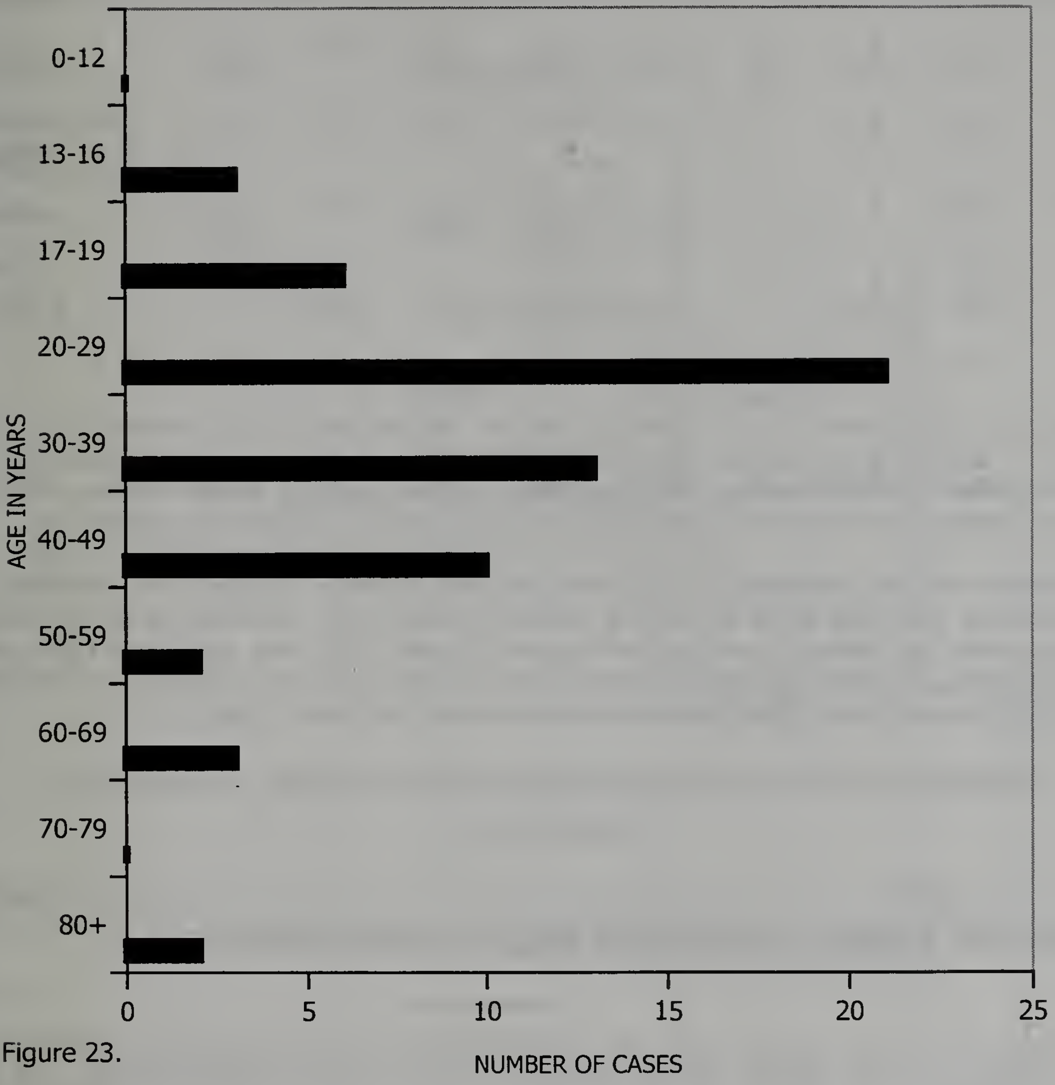


Figure 23.

TABLE XXIX. HOMICIDE METHODS BY AGE

Age Range - Years

Method	**0-12**	**13-16**	**17-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80+**	**Unk**
Firearms	0	2 (5%)	5 (13%)	15 (37%)	11 (27%)	5 (12%)	0	2 (5%)	0	0	1 (2%)
Head Trauma	0	0	0	0	0	0	0	0	0	1 (100%)	0
Other Trauma	0	0	0	2 (33%)	1 (17%)	2 (33%)	0	1 (17%)	0	0	0
Stabbing	0	1 (12%)	0	3 (38%)	1 (12%)	1 (12%)	2 (25%)	0	0	0	0
Other	0	0	1 (25%)	1 (25%)	0	2 (50%)	0	0	0	0	0
TOTALS	**0**	**3**	**6**	**21**	**13**	**10**	**2**	**3**	**0**	**1**	**1**
% OF TOTALS	**(0%)**	**(5%)**	**(10%)**	**(35%)**	**(22%)**	**(17%)**	**(3%)**	**(5%)**	**(0%)**	**(2%)**	**(2%)**

NOTE: Row percents refer to percentage by age range for each method. These can be compared to total percentages for each age range to see if a method is more or less prevalent in an age group. For example, deaths by stabbing occur *more* frequently in the 50-59 year age group (25%) than the general involvement of this age group in homicides (3%) while deaths by stabbing occur *less* frequently in the 30-39 year age group (12%) than all homicides in this age group (22%).

TABLE XXX. HOMICIDE VICTIMS AGE RANGES COMPARISON BY YEAR

Fiscal Year

Age Range Years	**'90-'91**	**'91-'92**	**'92-'93**	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**	**'98-'99**	**'99-'00**
0-19	13	19	16	11	18	8	5	8	5	9
20-29	37	39	49	53	34	32	22	29	16	21
30-39	27	32	25	26	23	32	18	15	11	13
40-49	12	17	14	12	12	11	9	12	14	10
50-59	5	10	13	8	4	6	5	6	7	2
60-69	5	0	3	4	2	4	2	3	1	3
70+	5	6	7	4	0	5	2	2	5	2

TABLE XXXI. HOMICIDE METHODS BY SEX

Method	Sex Male		Female	
Firearms	36	(88%)	5	(12%)
Head Trauma	1	(100%)	0	(0%)
Other Trauma	3	(50%)	3	(50%)
Stabbing	6	(75%)	2	(25%)
Other	1	(25%)	3	(75%)
TOTALS	**47**	**(78%)**	**13**	**(22%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths by trauma other than head trauma occur *more* frequently in females (50%) than the general involvement of females in homicides (22%), while deaths by firearms in males (88%) occur *more* frequently than all homicides in males (78%).

TABLE XXXII. MEAN AGE FOR HOMICIDE VICTIMS BY METHOD AND SEX

(Age in Years)

Method	Male	Female
Firearms	31	30
Head Trauma	87	-
Other Trauma	36	44
Stabbing	34	40
Other	46	29

The lowest mean age for **males** was seen in deaths by firearms.
The lowest mean age for **females** was seen in deaths by other varied means.

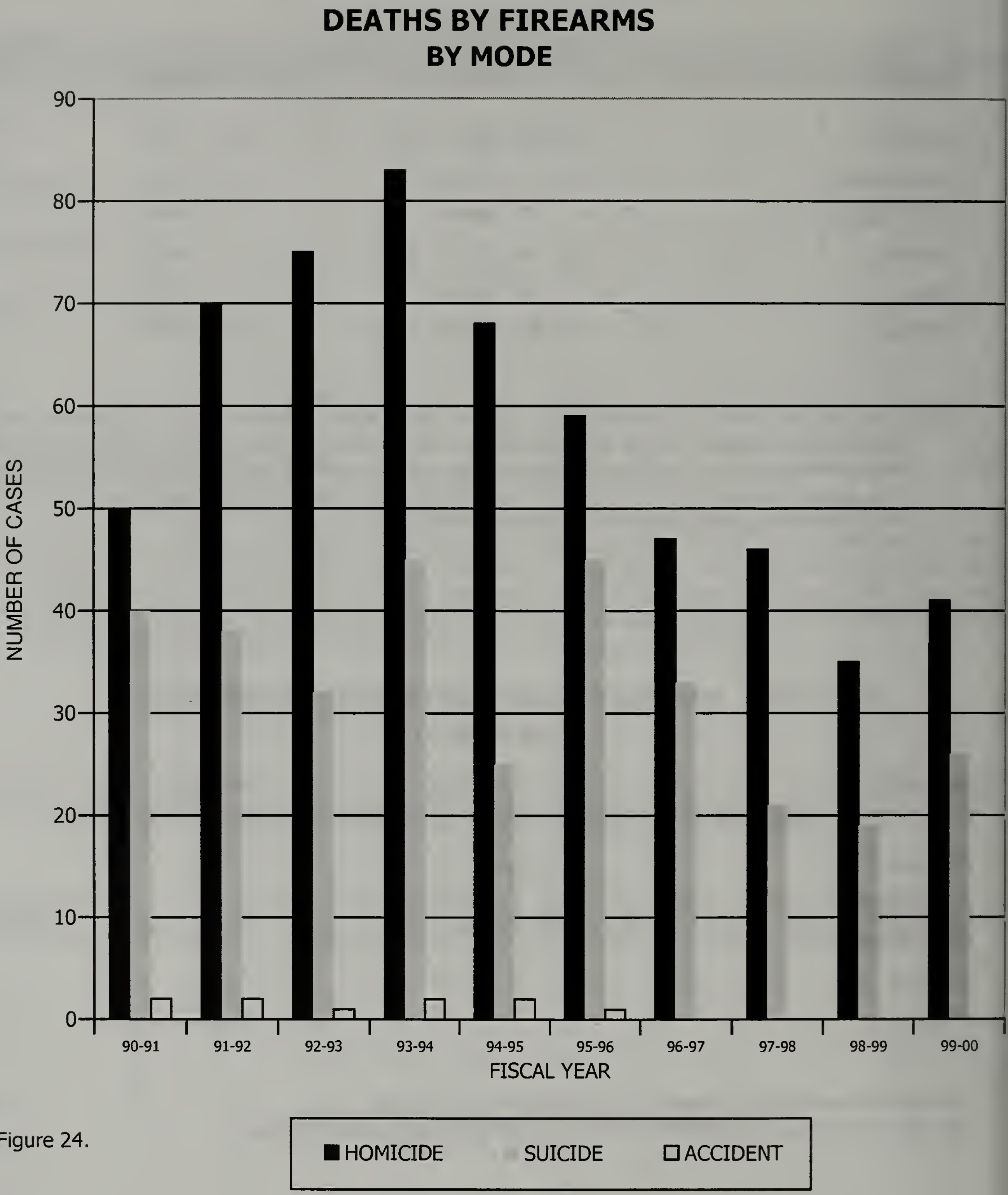

DEATHS BY FIREARMS
BY MODE
NUMBER OF CASES
90
80
70
60
50
40
30
20
10
0
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
FISCAL YEAR
■ HOMICIDE
SUICIDE
☐ ACCIDENT

Figure 24.

PATHOLOGY

In the **Pathology Department**, tissue and body fluid samples taken at autopsy are prepared for microscopic study, histochemically stained, or analyzed for chemical constituents. Cardiac pacemakers or other mechanical life-support devices are examined for any defect. Smears or "wet-mounts" are examined for spermatozoa, bacteria, or tuberculosis. Bacteriologic cultures may be taken. However, if pathogens are grown, they are usually sent to the Department of Public Health (State or local) for further identification. If indicated, "soft" X-rays or histochemical tests are done to establish entrance or exit gunshot wounds. New research techniques, such as methods of obtaining fingerprints from the skin of a victim, are developed here also.

MONTHLY FIGURES

Fiscal Year 1999-2000

PATHOLOGY*

ear	Total Med. Exam Cases	Cases Referred to Pathologist	No. of Organs Submitted	No. of Sections Taken	Histo-Pathologic Slides Made	Special Stains **	Serology ***	Other Determi-nations ****	Blood Drawing *****
999									
uly	128	74	471	934	580	42	36	248	32
ug.	120	82	601	1,198	697	83	99	407	22
ept.	100	52	322	638	380	36	42	204	13
ct.	140	79	520	1,091	687	103	56	453	17
ov.	113	64	446	1,097	667	89	35	605	19
ec.	145	82	511	1,116	670	85	56	425	18
000									
an.	141	77	481	1,099	598	60	21	322	18
eb.	127	69	463	888	470	34	7	450	12
ar.	133	74	455	916	493	21	21	513	6
pril	113	59	461	964	562	40	28	527	13
ay	125	77	546	1,143	613	38	63	670	18
une	133	69	425	974	662	36	28	1,087	15
OTALS	**1,517**	**858**	**5,702**	**12,058**	**7,079**	**667**	**492**	**5,911**	**203**

* These figures do not reflect photography, forensic radiology, or material prepared for teaching forensic pathology

** Includes smears examined for bacteria and spermatozoa

*** ABO and Anti-Rh typing, Reverse grouping, Anti Lewis a, and Anti Lewis b typing

**** Blood, Urine, Water, evidence for: Hematology, Biochemistry, Urinalysis, Bacteriology, "Sickledex", Specimen storage/retrieval

***** Includes all Blood drawing, Saliva sampling, Fingerprinting, and Urine sampling

TOXICOLOGY

Toxicology is the study of the interaction of foreign compounds, such as drugs, with living organisms (e.g. people). It involves knowing something of the nature of that interaction, how the foreign compounds break down (that is, how they are metabolized), and what effects they have on the health and behavior of the organism.

All of this information is vital to the role that toxicology plays in determining the cause of death, as well as in evaluating the significance of chemicals found in the living.

Generated within the Toxicology Department is information on samples from Medical Examiner's cases as well as from suspects in criminal cases (e.g. homicides, driving under the influence, probation failure, (H & S 11550), assaults) and other persons to be tested at the request of various law enforcement agencies. The data obtained in these cases enable the toxicologist to assist in interpreting the behavior of the suspects involved, to advise the District Attorney, the Public Defender, the City Attorney, Police Department, the California Highway Patrol, and other agencies, and to give expert testimony in court as necessary in such cases as to the effect of drugs in the case. This application of toxicological facts to legal problems is Forensic Toxicology.

The Toxicology Department also performs analyses on samples submitted by the Police and Fire Departments in connection with the recruitment programs and other personnel requirements. The results in some cases are presented to the respective commission in official hearings.

Toxicological facts are determined through tests performed on biological samples (e.g. blood, urine, gastric contents, liver, etc.) taken at the time of autopsy or from living persons. The samples are subjected to a series of chemical manipulations designed to extract any drugs or other physiologically active compounds that may be present. The subsequent extracts are then examined by equipment set up to detect, accurately identify, and quantitate any materials that may be present. These determinations must be of unquestionable accuracy and as specific as scientifically possible, and they must be able to stand up to review by any other qualified laboratory in the nation.

The analytical methods most commonly used in the toxicological studies are gas and thin layer chromatography; ultraviolet, visible, and fluorescence spectrophotometry; and immunoassay techniques. Advanced techniques, such as mass spectrometry and HPLC (High Performance Liquid Chromatography) are used as necessary for confirmation of difficult samples. These precise and sophisticated methods require the use of advanced laboratory apparatus and highly trained personnel.

Levels of drugs in two or more body compartments (one of which is invariably blood) are routinely determined in order to answer the question of whether the drug use is acute or chronic. This approach is of the utmost importance in determining the time of ingestion and whether or not the intent of the ingestion was suicide.

The range of drugs available to the public is extremely wide, and the nature and type of compounds involved are highly variable. The methodologies necessary to conduct toxicological analyses have to be similarly wide-ranging and also continually expanded in order to keep up with the manufacture of new drugs, both legal and illegal. This is an important aspect of the Toxicology Department's work, often requiring extensive research. So, too, does the identification of "street-manufactured" compounds which are sometimes found in postmortem samples. Also, with many drugs being compounded to have physiologic effects at very low doses, detection in body fluids is often extremely difficult.

The most common drugs in the community are alcohol and prescription items. However, illegal, or "street", drugs (especially morphine-type alkaloids [e.g. heroin], cocaine, and amphetamines) represent a very significant percentage of the compounds actually found in the cases presented to the Toxicology Department. Less commonly used drugs, industrial materials, certain gases, and various other foreign compounds have also been detected.

TOXICOLOGY - MEDICAL EXAMINER'S CASES

July 1999 - June 2000

Incidence of drugs and other physiologically active material detected

The compounds listed are not necessarily the cause of death nor even a contributing factor. They are the toxic agents that were **found to be present**, either singly *or* in combination, in Medical Examiner's cases.

ABUSE DRUGS	
Cocaine	154
Benzoylecgonine*	157
Morphine-type alkaloids	183
Codeine	136
Methamphetamine	35
Amphetamine	34
Phencyclidine (PCP)	1
MDMA (Ecstasy)	5
MDA	5
11-nor-delta-9-THC	1

ANALGESIC - NARCOTIC	
Methadone	40
Methadone Metabolite	35
Hydrocodone	17
Oxycodone	8
Propoxyphene (Darvon)	8
Norpropoxyphene	9
Meperidine (Demerol)	5
Fentanyl	5
Hydromorphone	1

ANALGESICS - NON-NARCOTIC	
Acetaminophen	7
Pentazocine (Talwin)	1
Salicylates	1

CARDIAC DRUGS	
Diltiazem (Cardizem)	6
Lidocaine	48
Metoprolol	1
Propafenone (Rythmol)	1
Verapamil (Calan)	1

ANTI-DEPRESSANTS	
Nortriptyline (Aventyl)	23
Amitriptyline (Elavil)	23
Trazodone (Desyrel)	8
Fluoxetine (Prozac)	26
Paroxetine (Paxil)	8
Sertraline (Zoloft)	7
Doxepin (Sinequan)	5
Desipramine (Norpramin)	5
Imipramine (Tofranil)	1
Mirtazepine (Remeron)	7
Bupropion (Wellbutrin)	11

SEDATIVE-HYPNOTIC - Barbiturates	
Phenobarbital	1
Pentobarbital	3
Secobarbital	1

ANTIHISTAMINES	
Diphenhydramine (Benadryl)	38
Doxylamine	12
Chlorpheniramine	18
Promethazine (Phenergan)	11
Brompheniramine	2
Hydroxyzine (Vistaril)	8

DECONGESTANTS	
Pseudoephedrine	11

BRONCHODILATORS	
Ephedrine	22

* Benzoylecgonine is not a drug of abuse. It is a metabolite of cocaine and is generally present when cocaine is detected. In some cases, benzoylecgonine, but not cocaine, was found which indicated that there had been some exposure to cocaine.

TOXICOLOGY - MEDICAL EXAMINER'S CASES

July 1999 - June 2000

Drugs Detected, Continued

ANTICONVULSANTS	
Diphenylhydantoin (Dilantin)	3
Carbamazepine (Tegretol)	2
Valproic Acid	3

ANTIPSYCHOTIC AGENTS	
Thioridazine (Mellaril)	1
Perphenazine (Trilafon)	1
Compazine (Prochlorperazine)	1

MISCELLANEOUS	
Olanzepine (Zyprexa)	18
Carbon Monoxide	11
Acetone	11
Ibuprofen	5
Carisoprodol	4
Ambien (Zolpidem)	3
Isopropyl Alcohol	3
Ketamine	2
Chloral Hydrate	2
Methemoglobin	2
Primidone	1
Quinine	1
Pyrimethamine	1

ANTI-ANXIETY AGENTS	
Diazepam (Valium)	37
Nordiazepam	35
Chlordiazepoxide (Librium)	9
Meprobamate	7
N-Desalkylflurazepam	6
Flurazepam (Dalmane)	4
Clonazepam	3
Buspirone (BuSpar)	2
Alprazolam (Xanax)	2
Temazepam (Restoril)	1

TOXICOLOGY CASES

July 1999 - June 2000

Year / Month	Medical Examiner	Forensic Toxicology*	Total Cases	Total Tests Performed
1999				
July - September	346	373	719	7,943
October - December	294	456	750	8,000
2000				
January - March	399	464	863	8,478
April - June	371	708	1,079	10,294
TOTALS	**1,410**	**2,001**	**3,411**	**34,715**

* Cases in which specimens were referred to the Medical Examiner's Toxicology Laboratory for forensic toxicological examination generally were criminal cases in which the presence of drugs was suspected either in the victim or suspect of the crime. DUI, 11550, management control, out-of-county and other miscellaneous cases are included in this tabulation.

ABUSE DRUGS

The role of abuse drugs in deaths during the 1999-2000 fiscal year is presented in this section. The four abuse drugs most commonly seen in Medical Examiner's cases - cocaine, heroin, amphetamines and PCP - will be examined. The number of cases in which these drugs were found either alone or in combination with other abuse drugs are presented in Table XXXII, page 65. In drug-caused deaths, heroin was the most frequently observed drug of abuse both where drugs were present alone and when drugs were present in combination.

Distribution by Sex (Table XXXIV, page 66)

In deaths caused by abuse drugs (DC = drug caused), where the drugs were present either singly or in combination, 67-100% of the deceased individuals were males.

Distribution by Race (Table XXXIV, page 66)

White-Non-Hispanic (W-NH) - In drug-caused deaths where abuse drugs were present singly, the white non-Hispanic racial group predominated in deaths caused by heroin. In drug-caused deaths where abuse drugs were present in combination with other abuse drugs, the white non-Hispanic racial group predominated in deaths caused by all abuse drugs being studied.

Black/Non-Hispanic (B-NH) - In drug-caused deaths where abuse drugs were present singly, the black non-Hispanic racial group predominated in deaths caused by cocaine.

White-Hispanic (W-H) - This racial group was most heavily represented in drug caused deaths where heroin was present alone.

Distribution by Age (Table XXXIV, page 66)

The lowest mean age was seen in drug-related deaths with PCP present in combination with other drugs (27.0 years) while the highest mean age was seen in drug-caused deaths with cocaine present alone (44.2 years).

Alcohol Involvement (Table XXXIV, page 66)

The presence of alcohol in the blood of abuse drug users (drugs present singly) where deaths were caused by drugs was most often associated with deaths caused by heroin alone (47%) and was least associated with deaths caused by amphetamines alone (0%).

Deaths Involving Cocaine (Figure 25, page 67 and Tables XXXV and XXXVI, page 68)

Cocaine **alone** was the *cause* of death in 5 cases by overdose, as compared to 7 cases in 1998-99. Cocaine alone was also present in 20 *drug-related* deaths (See Table XXXV) including 7 ruled to be accidental, and 10 ruled to be by homicide. (In 1997-98, cocaine was present in 19 homicides.) Of the 20 *drug-related* deaths, 6 (30%) were due to gunshot or stabbing.

Cocaine **in combination** with other drugs was the *cause* of death in 85 cases by overdose, a 2% decrease from 1998-99. Cocaine in combination was also present in 19 *drug-related* deaths (See Table XXXVI) including 3 cases ruled to be accidental, 2 cases ruled to be by suicide, and 9 cases ruled to be by homicide. Of these 14 deaths, 4 (29%) were due to gunshot.

The number of deaths due to cocaine over the last 10 fiscal years is shown in Figure 25. It can be seen that the number of deaths due to cocaine decreased by 5 from 1998-99.

Deaths Involving Heroin (Figure 25, page 67 and Table XXXVII, page 70)

Heroin **alone** was the *cause* of death in 21 cases by overdose, a decrease of 20 from the preceding fiscal year! Heroin alone also was present in 1 *drug-related* death. The involvement of heroin alone in *drug-related* deaths was very low as compared to the involvement of cocaine in this type of death, both in number and manners of death.

Heroin **in combination** with other drugs was the *cause* of death in 99 cases by overdose, a 21% increase from the previous fiscal year total of 82 cases. Heroin in combination was present in 17 *drug-related* deaths, 3 (18%) of which were due to gunshot.

The numbers of deaths due to heroin over the last 25 fiscal years are shown in Figure 27, page 72. The number of such deaths for 1999-2000 is the fourth highest during this period.

Deaths Involving Amphetamines (Figure 25, page 67 and Table XXXVIII, page 71)

Amphetamines **alone** were the *cause* of death in 1 case by overdose as compared to 3 in 1998-99, 0 in 1997-98 and to 2 each in 1996-97 and 1995-96. Amphetamines *alone* were also present in 9 *drug-related* deaths, 1 of which (11%) was the result of gunshot.

Amphetamines **in combination** with other drugs were the *cause* of death in 10 cases by overdose, a decrease of 29% from the previous fiscal year. Amphetamines in combination with other drugs were present in 7 *drug-related* deaths, 1 of which (14%) was due to gunshot.

Abuse Drugs Present in Violent Deaths (See Figure 26, page 69)

Cocaine is the drug of abuse seen most frequently in deaths by homicide and suicide.

TABLE XXXIII. ABUSE DRUGS

Abuse Drugs Present Alone

Drug	Drug Caused Deaths*	Drug Related Deaths	Role Unclear	Incidental Finding
Cocaine alone	6	20	11	3
Heroin alone	21	1	1	0
Amphetamines alone	3	9	2	3
PCP alone	0	0	0	0

Abuse Drugs Present in Combination with Other Drugs

Drug	Drug Caused Deaths*	Drug Related Deaths	Role Unclear	Incidental Finding
Cocaine in combination	89	19	6	5
Heroin in combination	101	17	7	3
Amphetamines in combination	11	7	0	1
PCP in combination	0	0	0	0

*NOTE: Drug *caused* deaths are not all due to drug overdoses.

TABLE XXXIV. ABUSE DRUGS - INCIDENCE BY SEX, RACE, AGE, AND ALCOHOL INVOLVEMENT

Drugs Present Singly

	SEX		RACE						
Drug	% M	% F	% W-NH	% W-H	%B-NH	Mean Age	% With Alcohol	# Positive (# Tested)	Ave. Alc. Conc. (g%)
Cocaine - DC*	67	33	17	0	67	44.2	20	1 (of 5)	0.05
Cocaine - DR**	65	35	20	25	55	37.1	45	9 (of 20)	0.20
Heroin - DC*	95	5	71	10	14	41.0	47	9 (of 19)	0.18
Heroin - DR**	100	0	100	0	0	31.0	0	0 (of 1)	-
Amphet. - DC*	100	0	33	0	33	40.0	0	0 (of 3)	-
Amphet. -DR**	100	0	67	11	11	40.2	50	4 (of 8)	0.14
PCP - DC*						NONE			
PCP - DR**						NONE			

Drugs Present in Combination

	SEX		RACE						
Drug	% M	% F	% W-NH	% W-H	%B-NH	Mean Age	% With Alcohol	# Positive (# Tested)	Ave. Alc. Conc. (g%)
Cocaine - DC*	82	18	59	8	31	40.0	42	36 (of 85)	0.14
Cocaine - DR**	68	32	37	21	32	35.7	17	3 (of 18)	0.10
Heroin - DC*	85	15	67	6	24	40.3	49	46 (of 94)	0.15
Heroin - DR**	76	24	41	24	24	42.7	25	4 (of 16)	0.11
Amphet. - DC*	91	9	55	9	36	40.4	18	2 (of 11)	0.14
Amphet. - DR**	100	0	86	0	0	33.6	0	0 (of 7)	-
PCP+ - DC*						NONE			
PCP. - DR**	100	0	100	0	0	27.0	0	0 (of 1)	-

* DC = Drug Caused ** DR = Drug Related

DEATHS DUE TO AMPHETAMINES, COCAINE AND HEROIN

BY FISCAL YEAR

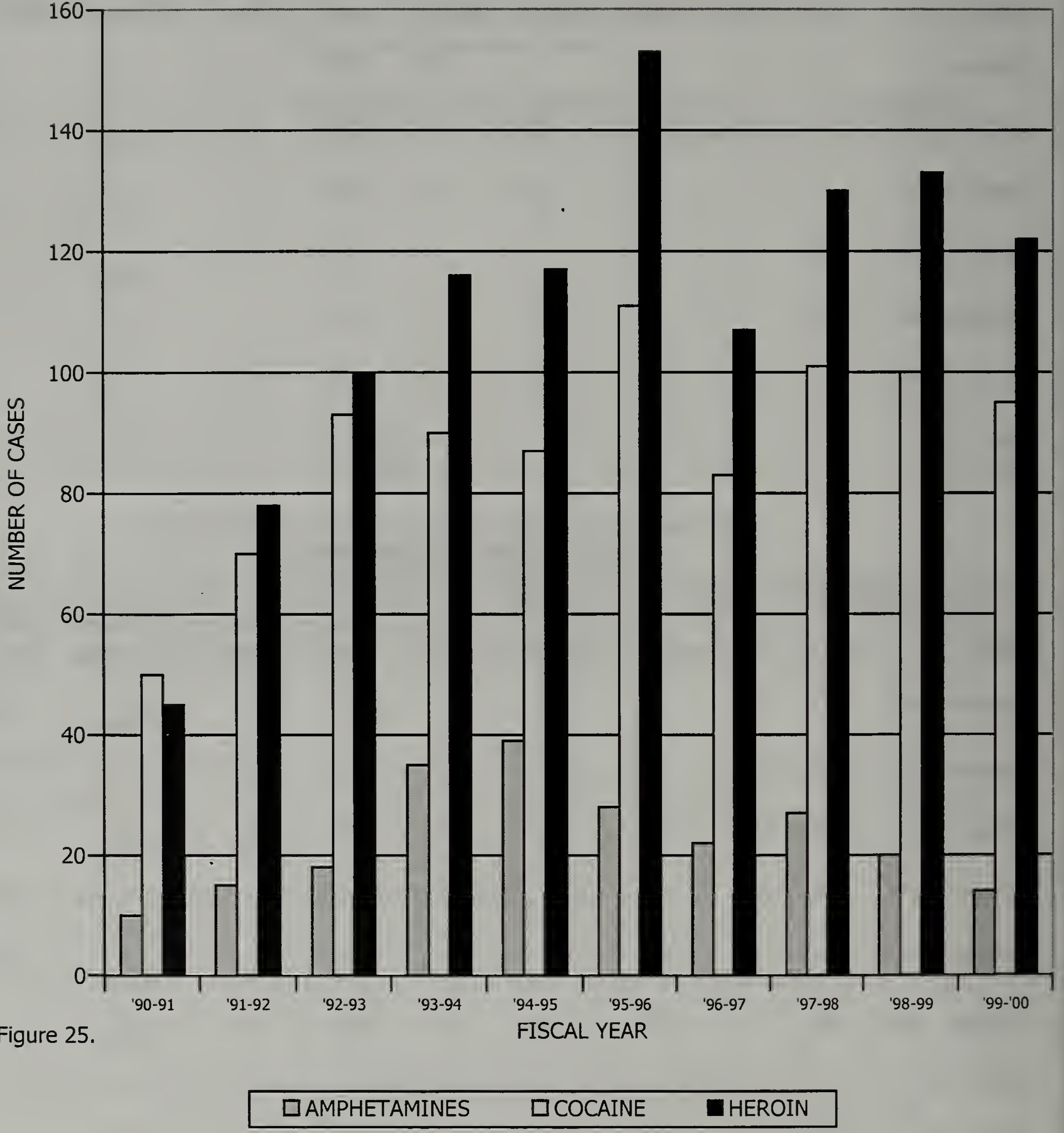


Figure 25.

DEATHS INVOLVING COCAINE

TABLE XXXV. COCAINE PRESENT ALONE

	Manner of Death					
CAUSE OF DEATH	**ACC**	**SUI**	**HOM**	**NC**	**UND**	**TOTALS**
Drug Caused Deaths						
Aspiration Pneumonia	1	0	0	0	0	**1**
Overdose	5	0	0	0	0	**5**
Drug Related Deaths						
Bronchopneumonia	1	0	0	0	0	**1**
Gunshot Wound	0	2	4	0	0	**6**
Intracerebral Hemorrhage	1	0	0	0	0	**1**
Jump - Building	0	1	0	0	0	**1**
Multiple Traumatic Injuries	0	0	2	0	0	**2**
Myocardial Ischemia	2	0	0	0	0	**2**
Stabbing/Cutting	0	0	2	0	0	**2**
Vehicular	3	0	2	0	0	**5**
TOTALS	**13**	**3**	**10**	**0**	**0**	**26**

TABLE XXXV. COCAINE IN COMBINATION WITH OTHER DRUGS

	Manner of Death					
CAUSE OF DEATH	**ACC**	**SUI**	**HOM**	**NC**	**UND**	**TOTALS**
Drug Caused Deaths						
Intracerebral Hemorrhage	3	0	0	0	0	**3**
Myocardial Ischemia	1	0	0	0	0	**1**
Overdose	78	5	0	0	2	**85**
Drug Related Deaths						
Asphyxia	1	1	0	0	0	**2**
Bronchopneumonia	1	0	0	1	0	**2**
Dilated Cardiomyopathy	0	0	0	1	0	**1**
Endocarditis	1	0	0	0	0	**1**
Fall	0	1	0	0	0	**1**
Gunshot Wound	0	0	4	0	0	**4**
Intracerebral Hemorrhage	0	0	0	1	1	**2**
Necrotizing Fasciitis	0	0	0	1	0	**1**
Smoke Inhalation	0	0	1	0	0	**1**
Stabbing	0	0	3	0	0	**3**
Vehicular	0	0	1	0	0	**1**
TOTALS	**85**	**7**	**9**	**4**	**3**	**108**

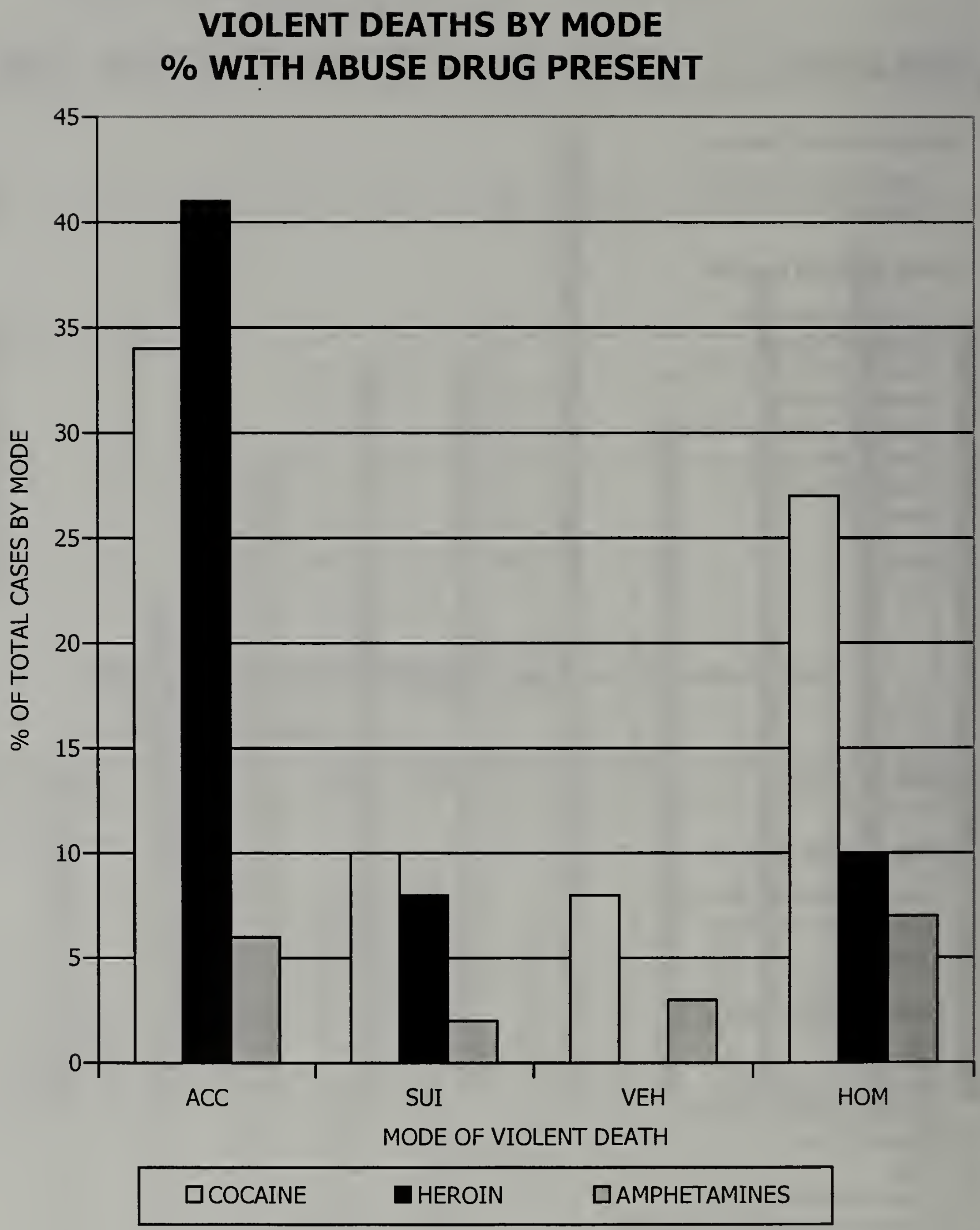

VIOLENT DEATHS BY MODE
% WITH ABUSE DRUG PRESENT
% OF TOTAL CASES BY MODE
45
40
35
30
25
20
15
10
5
0
ACC
SUI
VEH
HOM
MODE OF VIOLENT DEATH
☐ COCAINE
■ HEROIN
▨ AMPHETAMINES

Figure 26.

TABLE XXXVII. DEATHS INVOLVING HEROIN

HEROIN PRESENT ALONE

	Manner of Death					
CAUSE OF DEATH	**ACC**	**SUI**	**HOM**	**NC**	**UND**	**TOTAL**
Drug Caused Deaths						
Overdose	21	0	0	0	0	**21**
Drug Related Deaths						
Bronchopneumonia	1	0	0	0	0	**1**
TOTALS	**22**	**0**	**0**	**0**	**0**	**22**

HEROIN PRESENT IN COMBINATION WITH OTHER DRUGS

	Manner of Death					
CAUSE OF DEATH	**ACC**	**SUI**	**HOM**	**NC**	**UND**	**TOTAL**
Drug Caused Deaths						
Intracerebral Hemorrhage	2	0	0	0	0	**2**
Overdose	91	6	0	0	2	**99**
Drug Related Deaths						
Asphyxia	1	1	0	0	0	**2**
Endocarditis	1	0	0	0	0	**1**
Bronchopneumonia	1	0	0	2	0	**3**
Fasciitis	0	0	0	1	0	**1**
Gunshot Wound	0	0	3	0	0	**3**
Hanging	1	1	0	0	0	**2**
Intracerebral Hemorrhage	0	0	0	1	0	**1**
Stabbing	0	1	2	0	0	**3**
Traumatic Injuries	0	0	1	0	0	**1**
TOTALS	**97**	**9**	**6**	**4**	**2**	**118**

TABLE XXXVIII. DEATHS INVOLVING AMPHETAMINES

AMPHETAMINES PRESENT ALONE

	Manner of Death					
CAUSE OF DEATH	**ACC**	**SUI**	**HOM**	**NC**	**UND**	**TOTAL**
Drug Caused Deaths						
Intracerebral Hemorrhage	1	0	0	0	0	**1**
Overdose	1	0	0	0	0	**1**
Ruptured Aortic Aneurysm	1	0	0	0	0	**1**
Drug Related Deaths						
Asphyxia	1	0	0	0	0	**1**
Drowning	0	0	0	0	1	**1**
Endocarditis	0	0	0	1	0	**1**
Gunshot Wound	0	0	1	0	0	**1**
Hanging	0	1	0	0	0	**1**
Motor Vehicle	1	1	0	0	0	**2**
Ruptured Aortic Aneurysm	0	0	0	1	0	**1**
Stabbing	0	0	1	0	0	**1**
TOTALS	**5**	**2**	**2**	**2**	**1**	**12**

AMPHETAMINES PRESENT IN COMBINATION WITH OTHER DRUGS

	Manner of Death					
CAUSE OF DEATH	**ACC**	**SUI**	**HOM**	**NC**	**UND**	**TOTAL**
Drug Caused Deaths						
Overdose	10	0	0	0	0	**10**
Smoke Inhalation	1	0	0	0	0	**1**
Drug Related Deaths						
Asthma	1	0	0	0	0	**1**
Bronchopneumonia	0	0	0	1	0	**1**
Dilated Cardiomyopathy	0	0	0	2	0	**2**
Gunshot Wound	0	0	1	0	0	**1**
Hanging	0	1	0	0	0	**1**
Stabbing	0	0	1	0	0	**1**
TOTALS	**12**	**1**	**2**	**3**	**0**	**18**

DEATHS DUE TO HEROIN

BY FISCAL YEAR

DRUGS ALONE OR IN COMBINATION

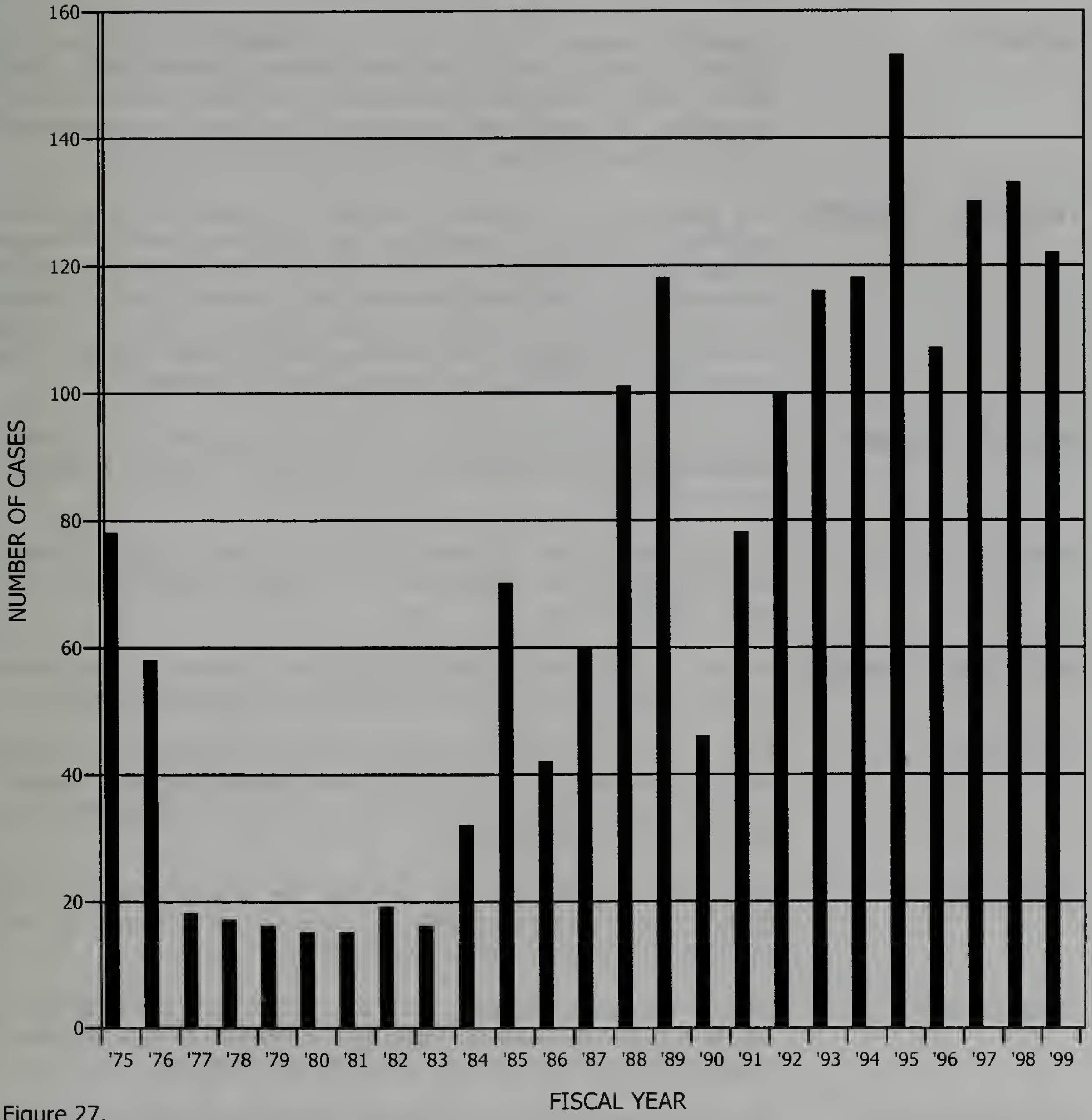


Figure 27.

GLOSSARY

ALKALOID OF MORPHINE GROUP	Typically referred to as morphine-type alkaloid, it is the chemical substance found in body fluids after the injection of heroin or other drugs derived from opium.
AUTOPSY	A scientific dissection of the human body to determine the cause and nature of death in order to detect public health hazards, determine the method or type of death in homicides and improve the level of medical care in the community. In some cases, showing that no injury or wrongdoing was present is of great emotional and stabilizing value to the family
FORENSIC PATHOLOGY	The specialty field of medicine involving the application of medical and pathology principles in determining the cause and manner of sudden, unexpected, and medically unattended deaths. This includes the type and nature of injury, public health hazards, type or nature of homicide weapon, the relation of injury to death and interpreting other factors for the court. These data are prepared and presented to the judicial system or public health interests in keeping with the best available knowledge
MEDICAL EXAMINER	A physician specifically trained in forensic pathology who is responsible for investigating and determining the cause and manner of sudden or unexpected death
MODE OF DEATH	Indicates the manner of death, such as natural, accident, suicide or homicide, and is to be distinguished from cause of death, which is purely a medical determination
MODE UNDETERMINED	With the cause of death determined, investigative data do not clearly support one of two possible modes and either one is possible without prejudice
PATHOLOGY	That branch of medicine which deals with the essential nature of disease, especially in the structural or functional changes in tissues, organs or systems of the body causing disease. It involves the diagnosis of disease by microscopic or chemical analysis
SEROLOGY	That branch of pathology which deals with the analysis of blood and body fluids. Blood types for identification, exclusion of a suspect or judicial purposes are examples of the use in this office
TOXICOLOGY	The scientific study of poisons, their detection, actions and treatment. The relationship of drug levels to emotional or personality change, behavioral or reasoning ability are frequent decisions based on these data
TOXICOLOGY NOT VALID OR ELIMINATED	This term indicates that the deceased lived long enough after the injury to have eliminated some or all toxic agents from the body

MEDICAL EXAMINER'S OFFICE
City and County of San Francisco, California

ANNUAL REPORT
July 1, 2000-June 30, 2001

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Boyd G. Stephens, M.D.
Chief Medical Examiner

ty and County of San Francisco **Chief Medical Examiner**

June 2002

The Honorable Willie L. Brown, Jr., Mayor
The Honorable Board of Supervisors
Mr. Ryan Brooks, Director of Administrative Services
Citizens of San Francisco

The attached Annual Report covers the Fiscal Year 2000-2001. It represents a compilation of the work of the Medical Examiner's Office for the year.

The report is the summation of much of the statistical and demographic data that is generated as a result of the work performed by the professional members of this Department. It should always be remembered that each "bit" of data represents something about the life of an individual, whether living or deceased.

The purpose of gathering and publishing these data is to establish information about the state of health of our Community. It also gathers information to disclose problems, both medical and social, that affect the wellbeing of all our citizens. From this information should come an improved understanding of those problems that need to be addressed. In some cases, this information denotes the results of work done in the past that led to a reduction of a particular problem. The information relating to those individuals arrested for driving under the influence of drugs and alcohol, for example, represents a particular problem in our Community that needs to be addressed. Generally, the same person is arrested more than once for driving under the influence. A stronger initial intervention and behavioral change appears to be in order.

Direction of public health efforts to a specific race or area of town is supported by deaths of infants and those dying of gunshots. Automobile accidents, especially involving pedestrians, are a preventable problem. Elder abuse and domestic violence are both preventable problems.

I am very proud of the people who work in my Department. Our work is extremely difficult, both emotionally and physically. For the men and women who work here, 24-7, the reward is often just knowing that our work helped a family, an individual or a community in need. That is one facet of the practice of medicine.

Sincerely,

Boyd G. Stephens, M.D.
Chief Medical Examiner

ll of Justice • 850 Bryant Street • San Francisco • CA 94103-4603 • Phone (415) 553-1694 • Fax (415) 553-1650
ACCREDITED NATIONAL ASSOCIATION OF MEDICAL EXAMINERS

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INTRODUCTION

The **Medical Examiner** is appointed by law to many responsibilities, the foremost of which is the investigation and certification of deaths, including all deaths of other than natural causation, and apparent natural deaths in which no physician can reasonably state the cause. The Medical Examiner may utilize any and all medico-legal investigative techniques, including autopsy, to establish both the medical cause of death, and mode and circumstances of the death (natural, accident, homicide, suicide or undetermined).

Deaths that must be reported to the Medical Examiner, as required by various sections of the Government, Health and Safety, and Penal Codes, are as follows:

1. Homicide - known or suspected
2. Suicide - known or suspected
3. Following accident or injury (whether the accident or injury is the primary cause or contributory, with death occurring immediately or at some remote time)
4. Medical attendance of less than 20 days
5. No physician in attendance
6. Physician unable to state the cause of death (must be unable, not merely unwilling)
7. Poisoning (food, chemical, drug, therapeutic agents)
8. Occupational or industrial deaths
9. All deaths in which a patient has not fully recovered from an anesthetic, whether in surgery, recovery room or elsewhere
10. All deaths in operating rooms
11. All solitary deaths (unattended by physicians or other person in the period immediately preceding death)
12. All deaths in which the patient is comatose throughout the period of the physician's attendance
13. All deaths of unidentified persons
14. All deaths in which there are grounds to suspect that the death occurred in any degree from a criminal act
15. All deaths involving contagious disease – known or suspected – and constituting a public health hazard
16. Deaths in prison or while under sentence
17. All deaths associated with a rape – known or alleged – or crime against nature
18. All deaths related to or following abortion – known or suspected
19. All deaths involving drowning, fire, hanging, gunshot, stabbing, cutting, starvation, exposure, alcoholism, drug addiction, strangulation or aspiration

Additional mandated responsibilities include protecting and safekeeping of property belonging to deceased individuals, conducting inquests when indicated, maintaining proper public records, making reports to other agencies, identification of deceased persons, interment of indigent dead, and many other death-related activities. Forensic Science and Toxicology are other aspects of the practice of forensic medicine.

FORENSIC MEDICINE

Forensic medicine generally is considered to be a marriage of medicine and the forensic sciences oriented to medico-legal issues. The field is wide-ranging and growing, becoming even broader in scope than the traditional concept as practiced in Europe. As a Medical Examiner, we commonly examine living persons for medico-legal purposes, often interpreting the findings for court purposes.

There has been continued growth and accentuation of the role of forensic medicine in the legal and medico-legal world over the past year. This office has continued its role in forensic medicine for both living and dead, playing a vital role in the community.

We serve in a number of places in the community. Some of these include:

Examination and diagnosis of the living:

- Examination and evaluation of child abuse
- Examination and evaluation of sexual assault injuries
- Examination and evaluation of spousal abuse
- Evaluation of citizens' complaints against the Police Department
- Testimony and interpretation of hospital records and procedures
- Evaluation of force and patterned injuries
- Examination of victims and suspects for trace evidence and injuries
- Collection of blood from suspects and victims for serology, toxicology and other testing
- Court testimony on force, great bodily injury (GBI) and other issues
- Alcohol and drug interaction in DUI (driving under the influence) cases and related issues
- Physiologic effects of drug interaction
- Toxicology, including environmental and industrial toxicities
- Teaching – hospitals, forensic, law enforcement, community
- Analysis for drugs on individuals on probation
- Analysis for drugs on management control cases for the County

Examination and evaluation of the dead:

- Scene investigation, reconstruction and analysis
- Evidence collection and testing
- Blood spatter analysis and interpretation
- Patterned evidence analysis and interpretation
- Trace evidence collection
- Time and place of death information
- Forensic autopsy – consultation and interpretation
- Analysis for chemical and limited serology testing
- Forensic toxicology
- Consultation with District Attorney and Public Defender
- Reconstruction analysis and court presentation
- Teaching – forensic and legal

DEPARTMENT STATUS AND FUTURE

The Department has a recurring problem with recruitment and retention of skilled professional staff. Our salaries are not competitive for this small pool of specialized individuals. The Bay Area and San Francisco specifically has lost much of its drawing power for the highly skilled employee. Our salaries are not competitive. Our cost of living and commute difficulties are familiar throughout the world. The complexity of our recruitment and job marketing programs makes rapid adjustment to the competitive recruitment process very difficult. In addition, we can offer no money to help with the costs of apartment or house hunting, moving, family relocation or any of the myriad of problems involved in getting a professional relocated. However, many other cities, counties and states make the commitment to help with recruitment. Many people are concerned about earthquakes, crime and other issues, such as terrorists. They view the City as an undesirable place to live.

The pool of specially trained individuals in our branches of the Forensic Sciences is very small, the competition very high, and other facilities often can make a much more attractive offer.

Since we no longer have a training program, we often get someone out of another training program who works for us for a few years to gain some experience, and then they are recruited to another job. Since our system is more attuned to local recruitment, it is often not adjustable to the national recruiting schedule.

Staffing our investigative staff is, for the same reasons, a full-time activity. These sworn Peace Officers are treated differently by the County as far as retirement and benefits. The competition for other investigative positions makes hiring qualified individuals more difficult.

As our budget and staffing are both reduced, we have to increase the help of computerized data management to do the same amount or more work. In the Forensic Sciences, technology is changing so rapidly that we often have to change hardware and programs every five years. There is a constant need for new instruments and skills to meet the rapidly changing world of Forensic Sciences. These specialized instruments are often very expensive and require a considerable amount of training to operate efficiently.

We plan to continue to work with local and state health departments to identify and reduce public health risks or disease. Interpretation of data from offices like this one has helped reduce the deaths of infants by more than 40%. Data from our office is often used to help plan programs, set funding levels and identify problems that affect living individuals.

We want to get our Toxicology Department modernized. All of our sworn personnel need to be certified nationally. We need to get our medical staff up to a total of five and restart our training program. We need to continue to modernize our Administrative facilities.

DEPARTMENTAL COSTS

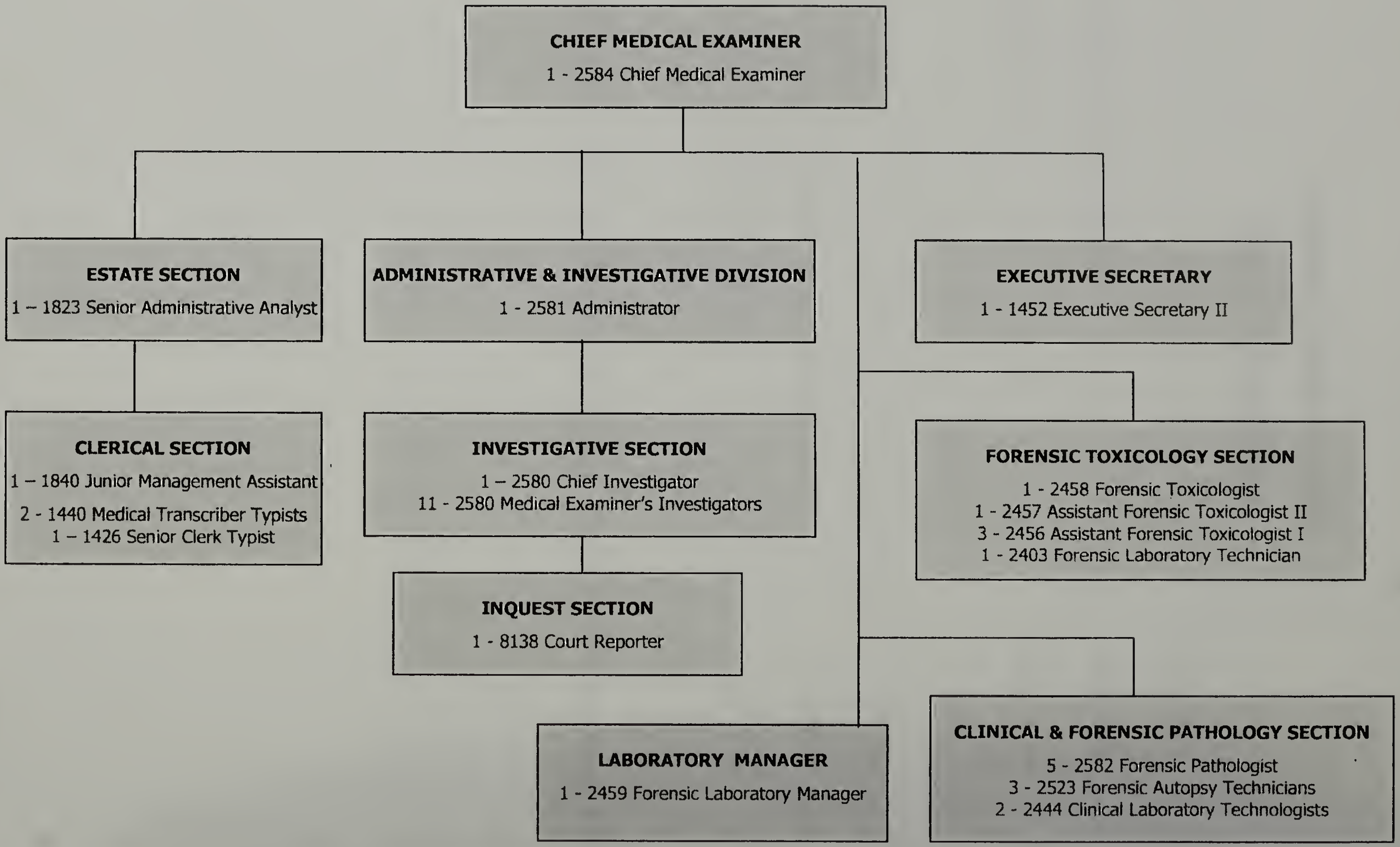
FISCAL YEAR 2000-2001

Total Budget	$4,182,551.00
Transfers to Controller: Health and Retirement	$590,126.00
Net Budget (all other costs)	$3,592,425.00
Total Cases	4,397
Cost Per Case Investigated	$817.02
Revenues (sales of records, public auctions, fee-for-service work)	$170,851.00
Total Costs Ad Valorum Taxes Per Case Investigated	$778.16

As indicated elsewhere, this includes all investigative, administrative, scientific and expert witness costs to the County.

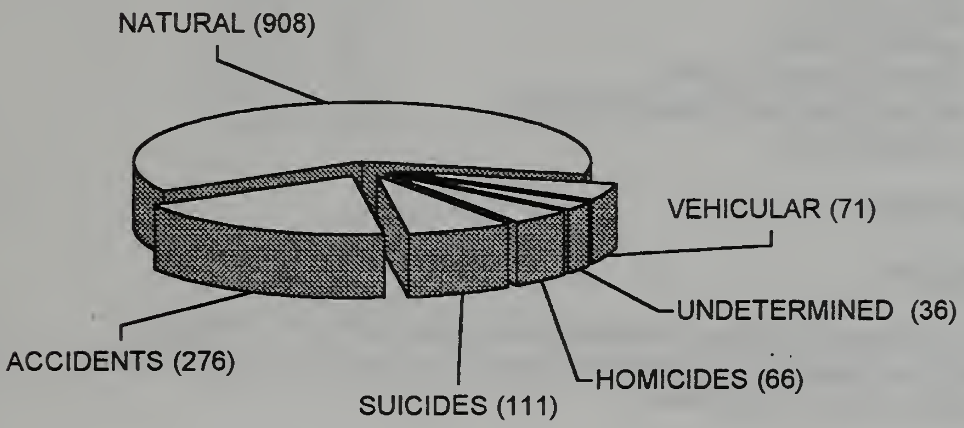
ORGANIZATIONAL CHART

Medical Examiner's Office


CHIEF MEDICAL EXAMINER
1 - 2584 Chief Medical Examiner
ESTATE SECTION
1 – 1823 Senior Administrative Analyst
CLERICAL SECTION
1 – 1840 Junior Management Assistant
2 - 1440 Medical Transcriber Typists
1 – 1426 Senior Clerk Typist
ADMINISTRATIVE & INVESTIGATIVE DIVISION
1 - 2581 Administrator
INVESTIGATIVE SECTION
1 – 2580 Chief Investigator
11 - 2580 Medical Examiner's Investigators
INQUEST SECTION
1 - 8138 Court Reporter
EXECUTIVE SECRETARY
1 - 1452 Executive Secretary II
FORENSIC TOXICOLOGY SECTION
1 - 2458 Forensic Toxicologist
1 - 2457 Assistant Forensic Toxicologist II
3 - 2456 Assistant Forensic Toxicologist I
1 - 2403 Forensic Laboratory Technician
LABORATORY MANAGER
1 - 2459 Forensic Laboratory Manager
CLINICAL & FORENSIC PATHOLOGY SECTION
5 - 2582 Forensic Pathologist
3 - 2523 Forensic Autopsy Technicians
2 - 2444 Clinical Laboratory Technologists

SAN FRANCISCO MEDICAL EXAMINER CASES
MANNER OF DEATH
FISCAL YEAR 2000-2001
JURISDICTION ON 1,468 CASES

Figure 1.



FISCAL YEAR 2000-2001

Total Deaths Reported to Medical Examiner	4,397
Cases Reported, Investigated and Cleared by the Medical Examiner for physician's signature	2,929
Total Cases Accepted by the Medical Examiner	1,468

Cases Accepted by the Medical Examiner (by manner of death)*

1. Natural Deaths (NC)	898	(61.2%)
2. Accidents (ACC)	276	(18.8%)
3. Suicides (SUI)	111	(7.6%)
4. Homicides (HOM)	66	(4.5%)
5. Mode Undetermined (UND)	36	(2.5%)
6. Sudden Infant Death Syndrome (SIDS)	10	(0.7%)
7. Vehicular (VEH)	71	(4.8%)

Inquests Held	11

Identification

Persons brought to Medical Examiner's Office with insufficient identification	176
Persons subsequently identified by fingerprints, dental X-rays or other means	174
Persons interred as unidentified	2

Examinations

Suspected child abuse	4

Specimens submitted for toxicology testing from living individuals

Living victims or defendants in violent crimes	76
Management control – other City departments	906
DUI suspects	640

* The abbreviations following each manner of death will be used in most tables in this report.

MEDICAL EXAMINER CASES
FISCAL YEAR 2000-2001

Of the total deaths registered in San Francisco in fiscal year 2000-2001, 4,397 were reported to the San Francisco Medical Examiner's Office. The Medical Examiner's Investigators examined the previous medical history, circumstances surrounding the deaths and, in many cases, the scene of death, and determined that 1,468 of these deaths came under the jurisdiction of this office. Full or partial autopsies or external examinations were performed on all cases.

The highest total number of death occurred in January 2001. The highest number for the various manners of death occurred during other months (e.g. highest number of non-vehicular accidents in December 2000 and February 2001, the highest number of vehicular deaths in August 2000, and the highest number of homicides in December 2000). See Table I and Figure 2, page 12.

MEDICAL EXAMINER CASES FOR 2000-2001

TABLE I. MANNER OF DEATH – MONTHLY COMPARISON

Month of Death	ACC	HOM	SUI	NC	VEH*	SIDS**	UND	TOTALS
July	27	6	9	69	2	1	2	116
August	22	7	13	86	10	1	3	142
September	19	5	9	58	6	1	7	105
October	16	2	9	67	6	1	4	105
November	20	4	5	64	4	0	1	98
December	29	9	8	87	8	0	3	144
January	25	6	12	92	8	1	3	147
February	29	6	10	83	4	1	4	137
March	23	7	11	86	2	0	1	130
April	22	3	8	72	5	0	3	113
May	21	5	7	62	7	2	1	105
June	23	6	10	72	9	2	4	126
TOTALS	**276**	**66**	**111**	**898**	**71**	**10**	**36**	**1,468**

* = Vehicular Death. These include 12 cases ruled to be homicide, 54 cases ruled to be accidental, 4 ruled to be suicide and 1 with mode undetermined.

** = Sudden Infant Death Syndrome

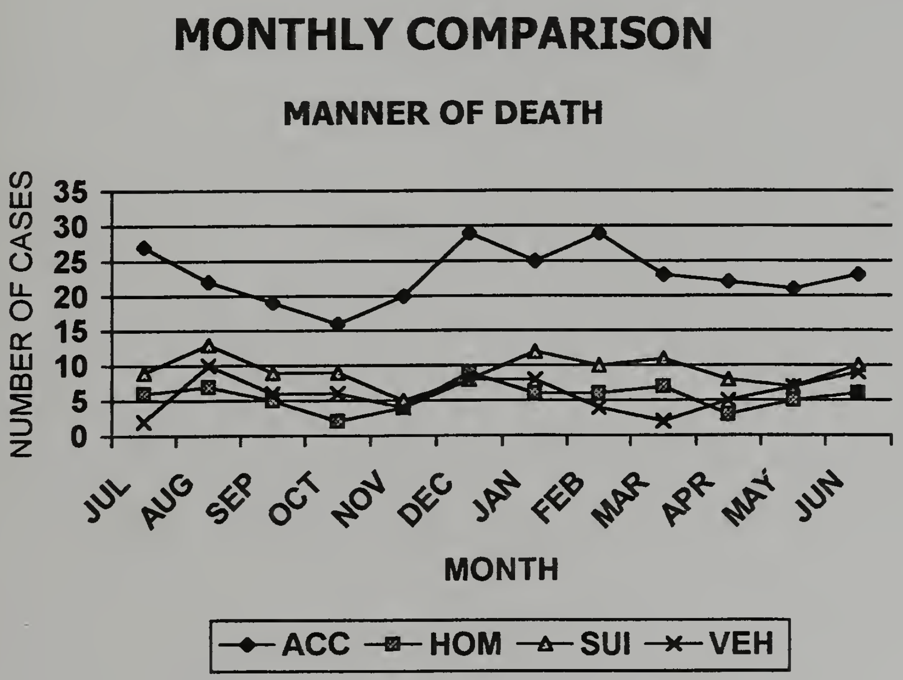


Figure 2.

YEARLY COMPARISONS OF MEDICAL EXAMINER'S CASES

Comparisons of manners of death over the last ten fiscal years are presented in this section (see Table II and Figure 3, page 15).

The number of non-vehicular homicides (66) during fiscal year 2000-2001 was a 10% increase from the 60 such homicides recorded in 1999-2000. The number of non-vehicular accidental deaths (276) was a decrease of only 1.8% from fiscal year 1999-2000's total of 281 such deaths. The number of cases ruled to be non-vehicular suicide (111) increased 7% from fiscal year 1999-2000's total of 101. The number of deaths due to natural causes (908) which came under the jurisdiction of this office decreased 5% from fiscal year 1999-2000. The total number of vehicular deaths (71) was a decrease of only 1 from fiscal year 1999-2000.

YEARLY COMPARISONS OF MEDICAL EXAMINER'S CASES

TABLE II. YEARLY COMPARISON OF MANNER OF DEATH

Fiscal Year

Manner of Death	'91-'92	'92-'93	'93-'94	'94-'95	'95-'96	'96-'97	'97-'98	'98-'99	'99-'00	'00-'01
Accident	266	286	270	296	319	283	349	307	281	276
Homicide	123	127	118	94	98	63	75	59	60	66
Suicide	153	132	136	124	156	139	111	90	101	111
Natural	885	930	816	925	1,115	1,034	1,086	1,075	959	908
Vehicular*	79	79	54	80	58	56	76	60	72	71
Undetermined	53	58	42	30	40	44	36	30	44	36
TOTALS	**1,557**	**1,612**	**1,451**	**1,549**	**1,789**	**1,619**	**1,733**	**1,621**	**1,517**	**1,468**

* = Vehicular Death. These include 12 cases ruled to be homicide, 54 cases ruled to be accidental, 4 cases ruled to be suicide and one with mode undetermined.

MANNER OF DEATH
COMPARISON BY FISCAL YEAR

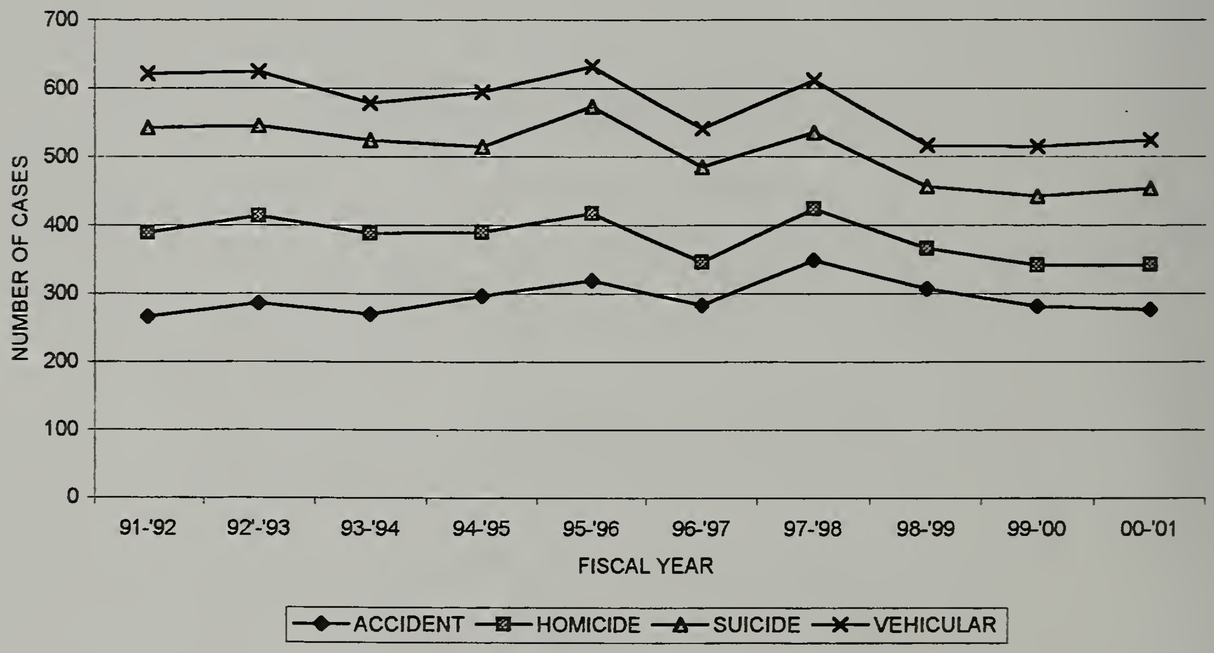


Figure 3.

TABLE III. **VIOLENT DEATHS**

Of the 1,468 deaths investigated by the Medical Examiner's Office during 2000-2001, 560 were determined to be the result of violence.

Mode	Total Number	% of Medical Examiner Cases
ACCIDENT	**330**	**22.5**
Vehicular	54	3.7
Non-Vehicular	276	18.8
SUICIDE	**115**	**7.8**
Vehicular	4	0.3
Non-Vehicular	111	7.6
HOMICIDE	**78**	**5.3**
Vehicular	12	0.8
Non-Vehicular	66	4.5
MODE UNDETERMINED	**37**	**2.5**
Vehicular	1	0.1
Non-Vehicular	36	2.5

VIOLENT DEATHS
FISCAL YEAR 2000-2001
TOTAL = 560

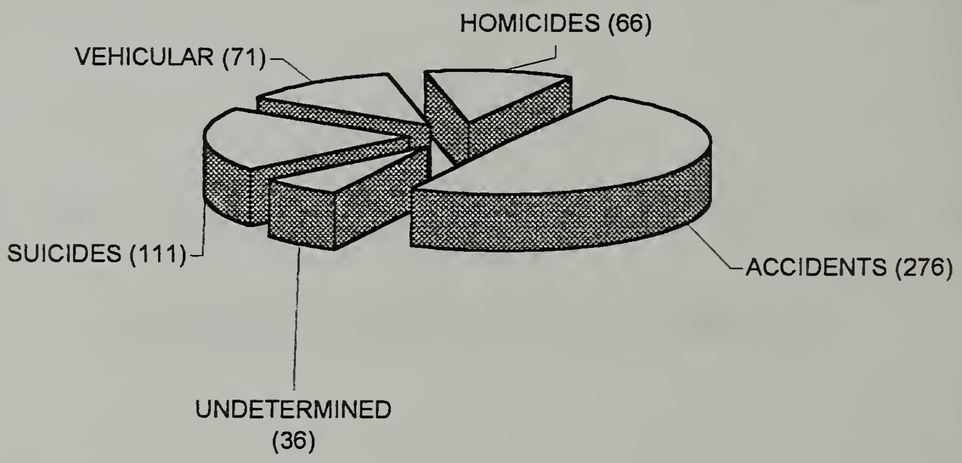


Figure 4.

PATHOLOGY

In the **Pathology Department**, tissue and body fluid samples taken at autopsy are prepared for microscopic study, histochemically stained, or analyzed for chemical constituents. Cardiac pacemakers or other mechanical life-support devices are examined for any defect. Smears or "wet-mounts" are examined for spermatozoa, bacteria or tuberculosis. Bacteriologic cultures may be taken. However, if pathogens are grown, they are usually sent to the Department of Public Health (State or local) for further identification. If indicated, "soft" X-rays or histochemical tests are done to establish entrance or exit gunshot wounds. New research techniques, such as methods of obtaining fingerprints from the skin of a victim, are developed here also.

MONTHLY FIGURES

Fiscal Year 2000-2001

PATHOLOGY*

Year	Total Med. Exam Cases	Cases Referred to Pathologist	No. of Organs Submitted	No. of Sections Taken	Histo-Pathologic Slides Made	Special Stains **	Serology ***	Other Determinations ****	Blood Drawing *****
2000									
July	116	68	408	945	528	86	29	391	34
Aug.	142	89	621	1,353	694	46	65	406	22
Sept.	105	56	306	731	384	54	49	253	30
Oct.	105	55	297	677	348	26	35	230	16
Nov.	98	53	485	1,236	657	61	56	278	12
Dec.	144	75	448	1,094	574	72	63	250	36
2001									
Jan.	147	70	393	886	493	46	84	238	34
Feb.	137	69	411	997	545	38	49	364	30
Mar.	130	62	336	796	446	44	56	387	38
April	113	54	285	608	312	58	44	294	20
May	105	50	267	587	315	20	56	314	26
June	126	63	422	862	458	43	69	305	12
TOTALS	**1,468**	**764**	**4,679**	**10,772**	**5,754**	**594**	**655**	**3,710**	**310**

* These figures do not reflect photography, forensic radiology, or material prepared for teaching forensic pathology.

** Includes smears examined for bacteria and spermatozoa

*** ABO and anti-Rh typing, Reverse grouping, Anti-Lewis a and Anti-Lewis b typing.

**** Blood, urine, water, evidence, for: Hematology, Urinalysis, Bacteriology, "Sickledex", specimen storage/retrieval

***** Includes all blood drawing, saliva sampling, fingerprinting, and urine sampling.

TOXICOLOGY

Toxicology is the study of the interaction of foreign compounds, such as drugs, with living organisms (e.g. people). It involves knowing something of the nature of that interaction, how the foreign compounds break down (that is, how they are metabolized) and what effects they have on the health and behavior of that organism.

All of this information is vital to the role that toxicology plays in determining the cause of death, as well as in evaluating the significance of chemicals found in the living.

Generated within the Toxicology Department is information on samples from Medical Examiner's cases as well as from suspects in criminal cases (e.g. homicides, DUI, probation failure, [H&S 11550], assaults) and other persons to be tested at the request of various law enforcement agencies. The data obtained in these cases enable the toxicologist to assist in interpreting the behavior of the suspects involved, to advise the District Attorney, the Public Defender, the City Attorney, Police Department, the California Highway Patrol, and other agencies, and to give expert testimony in court as necessary in such cases as to the effect of drugs in the case. This application of toxicological facts to legal problems is Forensic Toxicology.

The Toxicology Department also performs analyses on samples submitted by the Police and Fire Departments in connection with the recruitment programs and other personnel requirements. The results in some cases are presented to the respective commission in official hearings.

Toxicological facts are determined through tests performed on biological samples (e.g. blood, urine, gastric contents, liver, etc.) taken at the time of autopsy or from living persons. The samples are subjected to a series of chemical manipulations designed to extract any drugs or other physiologically active compounds that may be present. The subsequent extracts are then examined by equipment set up to detect, accurately identify, and quantitate any materials that may be present. These determinations must be of unquestionable accuracy and as specific as scientifically possible, and they must be able to stand up to review by any other qualified laboratory in the nation.

The analytical methods most commonly used in the toxicological studies are gas and thin layer chromatography; ultraviolet, visible, and fluorescence spectrophotometry; and immunoassay techniques. Advanced techniques such as mass spectrometry and HPLC (High Performance Liquid Chromatography) are used as necessary for confirmation of difficult samples. These precise and sophisticated methods require the use of advanced laboratory apparatus and highly trained personnel.

Levels of drugs in two or more body compartments (one of which is invariably blood) are routinely determined in order to answer the question of whether the drug use is acute or chronic. This approach is of the utmost importance in determining the time of ingestion and whether or not the intent of the ingestion was suicide.

The range of drugs available to the public is extremely wide, and the nature and type of compounds involved are highly variable. The methodologies necessary to conduct toxicological analyses have to be similarly wide-ranging and also continually expanded in order to keep up with the manufacture of new drugs, both legal and illegal. This is an important aspect of the Toxicology Department's work, often requiring extensive research. So, too, does the identification of "street-manufactured" compounds which are sometimes found in postmortem samples. Also, with many drugs being compounded to have physiologic effects at very low doses, detection in body fluids is often extremely difficult.

The most common drugs in the community are alcohol and prescription items. However, illegal, or "street" drugs (especially morphine-type alkaloids [e.g. heroin], cocaine, and amphetamines) represent a very significant percentage of the compounds actually found in the cases presented to the Toxicology Department. Less commonly used drugs, industrial materials, certain gases, and various other foreign compounds have also been detected.

TOXICOLOGY CASES

July 2000-June 2001

Year/Month	Medical Examiner	Forensic Toxicology*	Total Cases	Total Tests Performed
2000				
July-September	355	487	842	11,337
October-December	344	418	762	23,628
2001				
January-March	411	494	905	9,292
April-June	340	649	989	9,104
TOTALS	**1,450**	**2,048**	**3,498**	**53,361**

* Cases in which specimens were referred to the Medical Examiner's Toxicology Laboratory for forensic toxicological examination generally were criminal cases in which the presence of drugs was suspected either in the victim or suspect of the crime. DUI, 11550, management control, out-of-county, and other miscellaneous cases are included in this tabulation.

GLOSSARY

ALKALOID OF MORPHINE GROUP	Typically referred to as morphine-type alkaloid, it is the chemical substance found in body fluids after the injection of heroin or other drugs derived from opium.
AUTOPSY	A scientific dissection of the human body to determine the cause and nature of death in order to detect public health hazards, determine the method or type of death in homicides and improve the level of medical care in the community. In some cases, showing that no injury or wrongdoing was present is of great emotional and stabilizing value to the family.
FORENSIC PATHOLOGY	The specialty field of medicine involving the application of medical and pathology principles in determining the cause and manner of sudden, unexpected, and medically unattended deaths. This includes the type and nature of injury, public health hazards, type or nature of homicide weapon, the relation of injury to death and interpreting other factors for the court. These data are prepared and presented to the judicial system or public health interests in keeping with the best available knowledge.
MEDICAL EXAMINER	A physician specially trained in forensic pathology who is responsible for investigating and determining the cause and manner of sudden or unexpected death.
MODE OF DEATH	Indicates the manner of death, such as natural, accident, suicide or homicide, and is to be distinguished from cause of death, which is purely a medical determination.
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MEDICAL EXAMINER'S OFFICE
City and County of San Francisco, California

ANNUAL REPORT
July 1, 2001 - June 30, 2002

Boyd G. Stephens, M.D.
Chief Medical Examiner
850 Bryant Street
San Francisco, California 94103-4603

March 2003

The Honorable Willie L. Brown, Jr., Mayor
The Honorable Board of Supervisors
Mr. Darryl Burton, Director of Administrative Services
Citizens of San Francisco

The attached Annual Report covers the fiscal year 2001-2002. It represents a compilation of the work of the Medical Examiner's Office for the year.

The report is the summation of some of the statistical and demographic data that is generated as a result of the work performed by the professional members of this Department. It should always be remembered that each "bit" of data represents something about the life of an individual, whether living or deceased.

The purpose of gathering and publishing these data is to establish information about the state of health of our Community. It also gathers information to disclose problems, both medical and social, that affect the wellbeing of all our citizens. From this information should come an improved understanding of those problems that need to be addressed. In some cases, this information denotes the results of work done in the past that led to a reduction of a particular problem. The information relating to those individuals arrested for driving under the influence of drugs and alcohol, for example, represents a particular problem in our Community that needs to be addressed. Generally, the same person is arrested more than once for driving under the influence. A stronger initial intervention and behavioral change appears to be in order to reduce service costs and human suffering.

Direction of public health efforts to a specific race or area of town is supported by deaths of infants and those dying of gunshots. Automobile accidents, especially those involving pedestrians, are a preventable problem. Elder abuse and domestic violence are both preventable problems.

I am very proud of the people who work in my Department. Our work is extremely difficult, both emotionally and physically. For the men and women who work here, 24-7, the reward is often just knowing that our work helped a family, an individual or a community in need. That is one facet of the practice of medicine.

Sincerely,

Boyd G. Stephens, M.D.
Chief Medical Examiner

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FORENSIC MEDICINE

DEPARTMENT STATUS AND FUTURE

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        - ANNUAL COMPARISON BY MANNER OF DEATH
        - ANNUAL COMPARISON OF NUMBER OF HOMICIDES
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GLOSSARY

INTRODUCTION

The **Medical Examiner** is appointed by law to many responsibilities, the foremost of which is the investigation and certification of a variety of deaths including all deaths of other than natural causation, and any apparently natural deaths in which no physician can reasonably state the cause. The Medical Examiner can utilize any and all medico-legal investigative techniques, including autopsy, to establish both the medical cause of death, and mode or circumstances of death (natural, accident, homicide, suicide or undetermined).

The deaths which must be reported to the Medical Examiner, as required by various sections of the Government, Health and Safety and Penal codes, are as follows:

1. Homicide - known or suspected
2. Suicide - known or suspected
3. Following accident or injury (whether the accident or injury is the primary cause or contributory, with death occurring immediately or at some remote time)
4. Medical attendance of less than 20 days
5. No physician in attendance
6. Physician unable to state the cause of death (must be unable, not merely unwilling)
7. Poisoning (food, chemical, drug, therapeutic agents)
8. Occupational or industrial deaths
9. All deaths where a patient has not fully recovered from an anesthetic, whether in surgery, recovery room, or elsewhere
10. All deaths in operating rooms
11. All solitary deaths (unattended by physicians or other person in the period immediately preceding death)
12. All deaths in which the patient is comatose throughout the period of the physician's attendance
13. All deaths of unidentified persons
14. All deaths in which there are grounds to suspect that the death occurred in any degree from a criminal act
15. All deaths involving contagious disease - known or suspected - and constituting a public health hazard
16. Deaths in prison or while under sentence
17. All deaths associated with a rape - known or alleged - or crime against nature
18. All deaths related to or following abortion - known or suspected
19. All deaths involving drowning, fire, hanging, gunshot, stabbing, cutting, starvation, exposure, alcoholism, drug addiction, strangulation or aspiration

Additional mandated responsibilities include protecting and safekeeping of property belonging to deceased individuals, conducting inquests when indicated, maintaining proper public records, making reports to other agencies, identification of deceased persons, interment of indigent dead, and many other death related activities.

FORENSIC MEDICINE

Forensic medicine generally is considered to be a marriage of medicine and the forensic sciences oriented to medico-legal issues. The field is wide-ranging and growing, becoming even broader in scope than the traditional concept as practiced in Europe. As a Medical Examiner, we commonly examine living persons for medico-legal purposes, often interpreting the findings for court purposes.

There has been continued growth and accentuation of the role of forensic medicine in the legal and medico-legal world over the past year. This office has continued its role in forensic medicine for both living and dead, playing a vital role in the community.

We serve in a number of places in the community. Some of these include:

Examination and diagnosis of the living:

- Examination and evaluation of child abuse
- Examination and evaluation of sexual assault injuries
- Examination and evaluation of spousal abuse
- Evaluation of citizens' complaints against the Police Department
- Testimony and interpretation of hospital records and procedures
- Evaluation of force and patterned injuries
- Examination of victims and suspects for trace evidence and injuries
- Collection of blood from suspects and victims for serology, toxicology and other testing
- Court testimony on force, great body injury (GBI) and other issues
- Alcohol and drug interaction in driving under the influence cases and related issues
- Physiologic effects of drug interactions
- Toxicology, including environmental and industrial toxicities
- Teaching - hospitals, forensic, law enforcement, community
- Analysis for drugs on individuals on probation
- Analysis for drugs on management control cases for the County

Examination and evaluation of the dead:

- Scene investigation, reconstruction and analysis
- Evidence collection and testing
- Blood spatter analysis and interpretation
- Patterned evidence analysis and interpretation
- Trace evidence collection
- Time and place of death information
- Forensic autopsy - consultation and interpretation
- Analysis for chemical and limited serology testing
- Forensic toxicology
- Consultation with District Attorney and Public Defender
- Reconstruction Analysis and court presentation
- Teaching - forensic and legal

DEPARTMENT STATUS AND FUTURE

The Department has a recurring problem with recruitment and retention of skilled professional staff. Our salaries are not competitive for this small pool of specialized individuals. The Bay Area and San Francisco specifically, has lost much of its drawing power for the highly skilled employee. Our salaries are not competitive. Our cost of living and commute difficulties are familiar throughout the world. The complexity of our recruitment and job marketing programs makes rapid adjustment to the competitive recruitment process very difficult. In addition, we can offer no money to help with the costs of apartment or house hunting, moving, family relocation or any of the myriad of problems getting a professional relocated. However, many other Cities, Counties and States make the commitments to help with recruitment. Many people are concerned about earthquakes, crime and other issues, such as terrorists. They view the City as an undesirable place to live.

The pool of specially trained individuals in our branches of Forensic Sciences is very small, the competition very high, and other facilities can often make a much more attractive offer.

Since we no longer have a training program, we often get someone out of another training program who work with us for a few years to gain some experience, and then they are recruited to another job. Since our system is more attuned to local recruitment, it is often not adjustable to the national recruiting schedule.

Staffing our investigative staff is, for the same reasons, a fulltime activity. These sworn Peace Officers are treated differently by the County as far as retirement and benefits. The competition for other investigative positions makes hiring qualified professionals more difficult.

As our budget and staffing are both reduced, we have to increase the help of computerized data management to do the same or more work. In the Forensic Sciences, technology is changing so rapidly that we often have to change hardware and programs every five years. There is a constant need for new instruments and skills to meet the rapidly changing world of the Forensic Sciences. These specialty instruments are often very expensive and require a considerable amount of training to operate efficiently.

We plan to continue to work with Local and State Health Departments to identify and reduce public health risks or disease. Interpretation of data from offices like this has helped reduce the deaths of infants more than 40%. Data from our office is often used to help plan programs, set funding levels and identify problems that effect living individuals.

We want to get our Toxicology Department modernized. All of our sworn personnel need to be certified nationally. We need to get our Medical Staff up to a total of five and restart our training program. We need to continue to modernize our Administrative Facilities.

DEPARTMENTAL COSTS

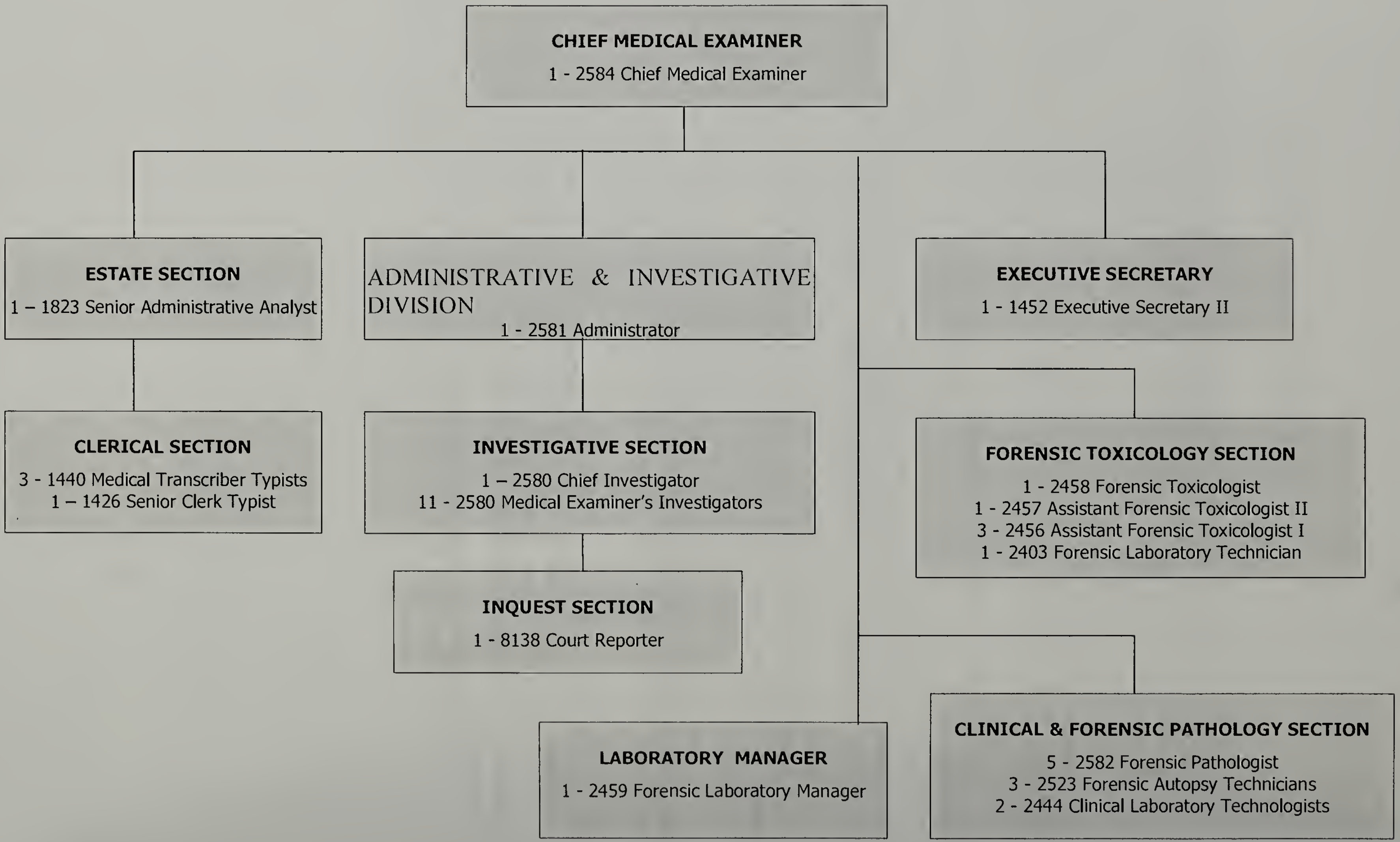
FISCAL YEAR 2001-2002

Total Budget	$4,173,098
Total Cases	4,318
Cost Per Case Investigated	$966
Revenues (sales of records, public auctions, fee-for-service work)	$230,000
Total Costs Ad Valorum Taxes Per Case Investigated	$913

As indicated elsewhere, this includes all investigative, administrative, scientific and expert witness costs to the County.

ORGANIZATIONAL CHART

Medical Examiner's Office



CHIEF MEDICAL EXAMINER
1 - 2584 Chief Medical Examiner

ESTATE SECTION
1 – 1823 Senior Administrative Analyst

CLERICAL SECTION
3 - 1440 Medical Transcriber Typists
1 – 1426 Senior Clerk Typist

ADMINISTRATIVE & INVESTIGATIVE DIVISION
1 - 2581 Administrator

INVESTIGATIVE SECTION
1 – 2580 Chief Investigator
11 - 2580 Medical Examiner's Investigators

INQUEST SECTION
1 - 8138 Court Reporter

EXECUTIVE SECRETARY
1 - 1452 Executive Secretary II

FORENSIC TOXICOLOGY SECTION
1 - 2458 Forensic Toxicologist
1 - 2457 Assistant Forensic Toxicologist II
3 - 2456 Assistant Forensic Toxicologist I
1 - 2403 Forensic Laboratory Technician

LABORATORY MANAGER
1 - 2459 Forensic Laboratory Manager

CLINICAL & FORENSIC PATHOLOGY SECTION
5 - 2582 Forensic Pathologist
3 - 2523 Forensic Autopsy Technicians
2 - 2444 Clinical Laboratory Technologists

FISCAL YEAR 2001-2002

Total Deaths Reported to Medical Examiner	4,318
Cases Reported, Investigated and Cleared by the Medical Examiner for physician's signature	2,883
Total Cases Accepted by the Medical Examiner	1,435

Cases Accepted by the Medical Examiner (by manner of death) **

1. Natural Deaths (NC)	987	(68.8%)
2. Accidents (ACC)	255	(17.8%)
3. Suicides (SUI)	95	(6.6%)
4. Homicides (HOM)	78	(5.4%)
5. Mode Undetermined (UND)	20	(1.4%)

Dispositions Authorized by the Medical Examiner

Indigents and fetus dispositions		175
Adults	168	
Infants	7	

Inquests Held or Depositions Taken	10

Identification

Persons brought to Medical Examiner's Office with insufficient identification	207
Persons subsequently identified by fingerprints, dental X-rays or other means	206
Persons interred as unidentified	1
Fingerprints taken and forwarded to FBI, CII, or SFPD	1200

** The abbreviations following each manner of death will be used in most tables in this report.

EXAMINATIONS AND REFERRALS

FISCAL YEAR 2001-2002

Examinations

Suspected child abuse	1

Specimens submitted for toxicology testing from living individuals

Living victims or defendants in violent crimes	46
Management control - other City departments	969
DUI suspects	566

MEDICAL EXAMINER CASES
FISCAL YEAR 2001-2002

Of the total deaths registered in San Francisco in fiscal year 2001-2002, 4,318 were reported to the San Francisco Medical Examiner's Office. The Medical Examiner's Investigators examined the previous medical history, circumstances surrounding the deaths and, in many cases, the scene of death, and determined that 1,435 of these deaths came under the jurisdiction of this office. Full or partial autopsies or external examinations were performed on all cases.

1. The highest total **number of deaths** occurred January 2002. The highest number for the various manners of death occurred during other months (e.g., highest number of homicides in July 2001 and the highest number of suicides in September 2001).

2. The **racial distribution** for each manner of death was quite variable. For example, the value of the ratio of whites/blacks was 3.5 overall, 4.0 for accidents, 17.3 for suicides (as compared to 27.8 for 1989-90, 13.5 for 1996-97, 10.9 for 1997-98, and 7.5 for 1998-99) and 0.9 for homicides.

3. The **age range distribution** for each manner of death was also variable. For example, the highest number of accidental deaths and suicides occurred in the 40-49 year age group, the highest number of homicides occurred in the 20-29 and 30-39 year age groups.

MEDICAL EXAMINER CASES FOR 2001-2002

TABLE I. MANNER OF DEATH - MONTHLY COMPARISON

MONTH	ACC	HOM	NC	SUI	UND	TOTAL
July	21	10	81	13	2	127
August	23	7	88	5	3	126
September	22	7	87	14	1	131
October	29	3	67	7	1	107
November	26	8	54	5	2	95
December	27	5	88	11	6	137
January	15	7	106	10	1	139
February	21	8	88	3	2	122
March	16	3	100	8	1	128
April	21	6	76	6	1	110
May	14	7	70	5	0	96
June	20	7	82	8	0	117
Total	**255**	**78**	**987**	**95**	**20**	**1,435**

TABLE II. MANNER OF DEATH BY RACE

RACE	ACC	HOM	NC	SUI	UND	TOTAL
White	163	30	632	69	14	908
Black	40	32	179	4	2	257
Asian	46	9	151	21	2	229
Other/Unknown	6	7	25	1	2	41
Total	**255**	**78**	**987**	**95**	**20**	**1,435**

TABLE III. MANNER OF DEATH BY AGE

Age Group	ACC	HOM	NC	SUI	UND	TOTAL
0-11 months	1	1	9*	0	2	13
1-5 years	2	1	2	0	0	5
6-12 years	2	2	0	0	0	4
13-16 years	2	3	0	1	0	6
17-19 years	1	4	1	1	0	7
20-29 years	20	23	8	13	5	69
30-39 years	35	23	46	15	3	122
40-49 years	66	5	148	23	7	249
50-59 years	36	10	195	15	1	257
60-69 years	16	4	175	8	1	204
70-79 years	28	1	183	5	0	217
80-89 years	32	1	163	12	0	208
90 + years	14	0	50	2	0	66
Unknown	0	0	7	0	1	8
Total	**255**	**78**	**987**	**95**	**20**	**1,435**

*4 SIDS Cases

TABLE IV. MANNER OF DEATH BY SEX

SEX	ACC	HOM	NC	SUI	UND	TOTAL
Male	168	61	657	63	11	**960**
Female	87	17	330	32	8	**474**
Unknown	0	0	0	0	1	**1**
Total	**255**	**78**	**987**	**95**	**20**	**1435**

YEARLY COMPARISON OF MEDICAL EXAMINER'S CASES

Comparisons of manners of death as well as methods used over the last ten fiscal years are presented in this section. It should be noted that vehicular deaths are not tabulated separately for the fiscal year 2001-2002. The most significant differences which have occurred over the last ten years which can be observed in these tabulations include:

> Regarding **manners of death**, the number of homicides (78) during fiscal year 2001-2002 was a 18% increase from the 66 homicides recorded in 2000-2001. The number of homicides recorded for fiscal year 2001-2002 (78) includes vehicular homicides where fiscal year 2000-2001 separates these categories. To include non-vehicular (66) and vehicular (12) homicides for fiscal year 2000-2001, the total of 78 is a 0% increase. The number of accidental deaths (255) decreased by 8% from 2000-2001. The number of cases ruled to be suicide (95) decreased 14% from fiscal year 2000-2001. The number of deaths due to natural causes (987) which came under the jurisdiction of this office increased 9% from fiscal year 2000-2001.

ANNUAL COMPARISONS OF MEDICAL EXAMINER'S CASES

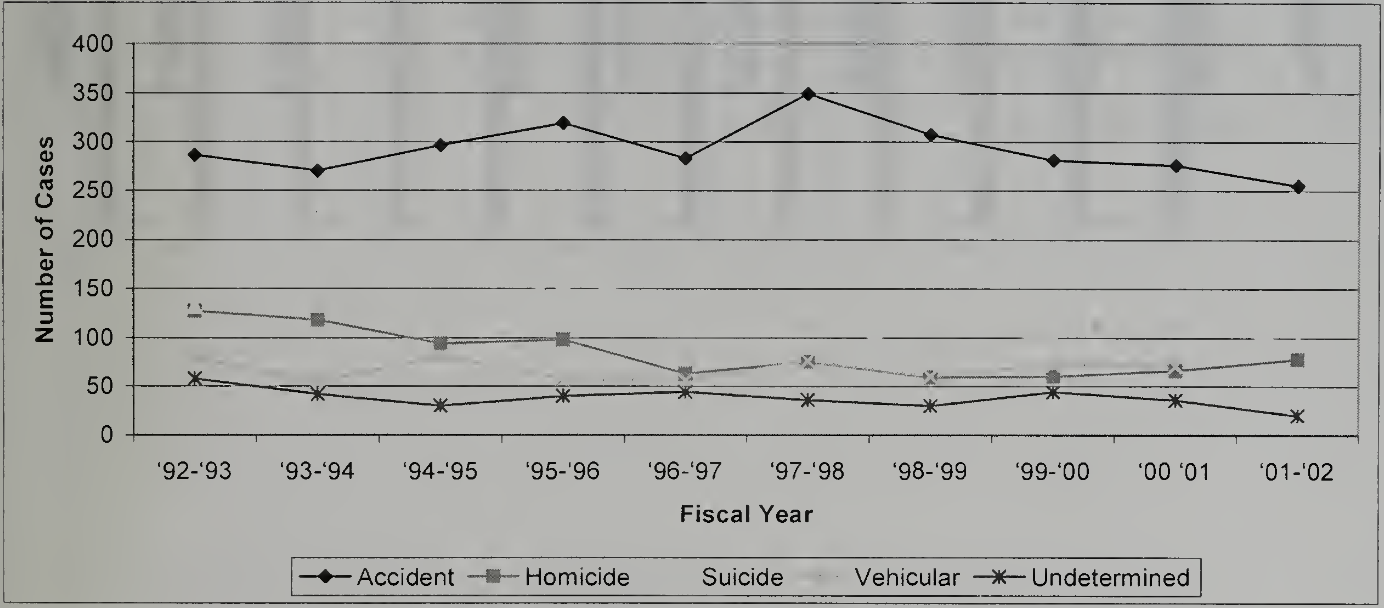
TABLE V. ANNUAL COMPARISON BY MANNER OF DEATH

Fiscal Year

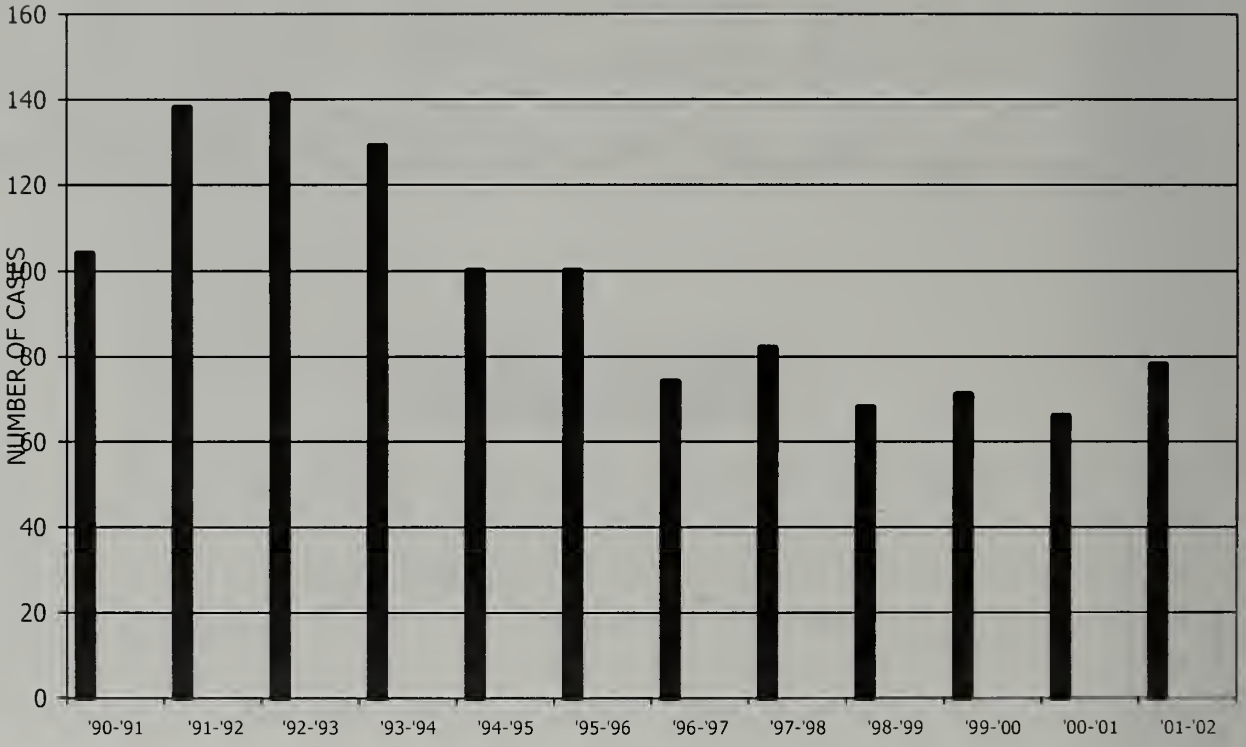
Manner of Death	'92-'93	'93-'94	'94-'95	'95-'96	'96-'97	'97-'98	'98-'99	'99-'00	'00 '01	'01-'02
Accident	286	270	296	319	283	349	307	281	276	255
Homicide	127	118	94	98	63	75	59	60	66	78
Suicide	132	136	124	156	139	111	90	101	111	95
Natural	930	816	925	1,115	1,034	1,086	1,075	959	908	987
Vehicular*	79	54	80	58	56	76	60	72	71	N/A*
Undetermined	58	42	30	40	44	36	30	44	36	20
TOTAL	**1,612**	**1,451**	**1,549**	**1,789**	**1,619**	**1,733**	**1,621**	**1,517**	**1,468**	**1,435**

*Information Not Available

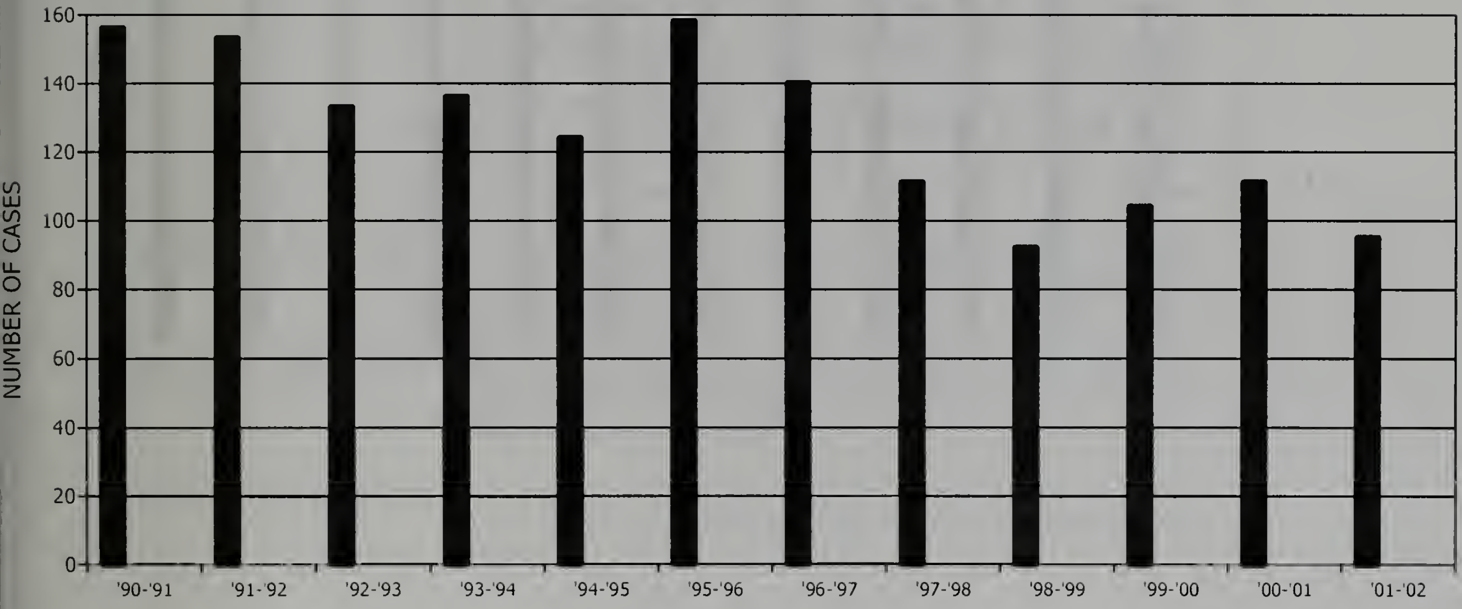
ANNUAL COMPARISON
BY MANNER OF DEATH



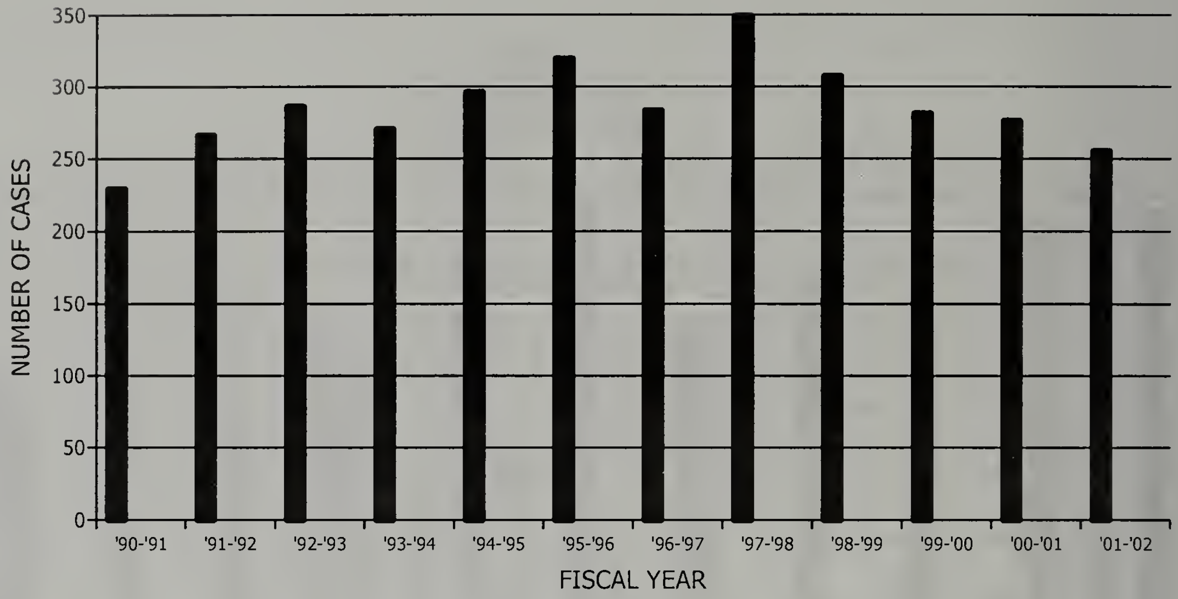
Homicides
Comparison by Year



Suicides
Comparison by Year



Accidents
Comparison by Year



GLOSSARY

AUTOPSY	A scientific dissection of the human body to determine the cause and nature of death in order to detect public health hazards, determine the method or type of death in homicides and improve the level of medical care in the community. In some cases, showing that no injury or wrongdoing was present is of great emotional and stabilizing value to the family
FORENSIC PATHOLOGY	The specialty field of medicine involving the application of medical and pathology principles in determining the cause and manner of sudden, unexpected, and medically unattended deaths. This includes the type and nature of injury, public health hazards, type or nature of homicide weapon, the relation of injury to death and interpreting other factors for the court. These data are prepared and presented to the judicial system or public health interests in keeping with the best available knowledge
MEDICAL EXAMINER	A physician specifically trained in forensic pathology who is responsible for investigating and determining the cause and manner of sudden or unexpected death
MODE OF DEATH	Indicates the manner of death, such as natural, accident, suicide or homicide, and is to be distinguished from cause of death, which is purely a medical determination
MODE UNDETERMINED	With the cause of death determined, investigative data do not clearly support one of two possible modes and either one is possible without prejudice

MEDICAL EXAMINER'S OFFICE

City and County of San Francisco, California

ANNUAL REPORT

July 1, 2002 - June 30, 2003

8
-03

Donna J. Allison, Ph.D.
Data Collection and Analysis/Statistics/Production

Boyd G. Stephens, M.D.
Chief Medical Examiner

City and County of San Francisco **Chief Medical Examiner**

May 2004

The Honorable Gavin Newsom, Mayor
The Honorable Board of Supervisors
Mr. Bill Lee, Administrative Officer
Mr. Darryl M. Burton, Director of Administrative Services
Citizens of San Francisco

The attached Annual Report covers the fiscal year 2002-2003. It represents the final report that will be prepared by me as the Chief Medical Examiner for the City and County of San Francisco. Upon my retirement, I will have been with the office for about 35 years. During that time, we went from a traditional Coroner's Office, with part-time autopsy surgeons and limited scene investigation, to a Medical Examiner's Office, with full-time forensic pathologists and routine scene investigation. The office made an additional transition from that of a Medical Examiner's Office to a Medical Examiner's System, using a team Investigative approach, along with other law enforcement or health agencies, to investigate suspicious deaths.

During those years, the office changed from a Coroner to a Medical Examiner by ordinance (1974). However, the City and County Charter required an office of Coroner. At the advice of the City Attorney, the department was titled Medical Examiner-Coroner to meet this legal requirement. With the passage of a new Charter in 1996, the required department became that of the Medical Examiner. An office of Coroner was thus eliminated from the Charter as a City and County requirement. As such, an office of Coroner no longer exists in San Francisco.

A Medical Examiner's System practices the art and science of medicine, specifically the application of forensic medicine, for the purposes of monitoring and helping to improve the public health of the community and for the investigation of certain types of deaths of public interest. In the former case, much of the forensic work we do relates to living persons. These are usually patients, victims or defendants who have some medico-legal issue that is typically related to a criminal investigation. For the latter, these are patients who have died under any of the many circumstances that give the Medical Examiner legal jurisdiction over their death. In that case, the law requires the determination of the cause, circumstances and manner of their death. That process requires working closely with many other agencies. Now, with new diseases, terrorists and rapid means of travel, any disease or danger could appear in our City at any time. The ability to rapidly recognize and respond in an appropriate fashion to any number of scenarios and any number of victims has to be part of the preparation and planning of the office.

This Annual Report reflects some of the work performed by members of the department over the past fiscal year. It must be remembered that each data point reflected here represents something about the life of an individual person. These data help establish information about the state of health in our community. The report also summarizes information about problems, both medical and social, that affect the well-being of our citizens. Policy makers and researchers can review these data to further define those problems that need to be addressed.

By looking at the information on trauma and drug toxicity, two of the major diseases of our youth are evident. Looking at the number of pedestrian deaths reflect on the risks that have the potential for modification or reduction by such processes as citizen education or traffic engineering.

The most dangerous drug in our society is still ethyl alcohol. Blood levels over 0.20% are common in people arrested for driving while intoxicated. Elevated ethyl alcohol levels are common in people arrested for crimes of violence and they are common in people who die of trauma. Other drugs commonly appear, representing major costs to health and society.

Past work performed by the department has paid off handsomely, leading to programs that have helped to reduce infant deaths, injuries and child abuse. Evidence collected during our case investigations has recently led to a number of "cold-hit" DNA solutions of outstanding homicides. Technology now is allowing the solution of unsolved cases from the past and the rapid solution of current cases. Sadly, many of the suspects on those old cases are career criminals with long records of violence.

With my retirement, my replacement , Dr. Amy Hart, will become new Chief Medical Examiner, effective July 1, 2004. I feel comfortable that her skills and leadership will continue the important work of this department. Although our work is extremely difficult, both emotionally and physically, our reputation for helping families at a time of great sorrow, of being neutral forensic scientists, both accurate and complete, is still a critical factor in maintaining a positive reputation and trust within the community. That no infectious disease will get by our review and no sinister death will go undetected is our goal. I expect that philosophy will continue well into the distant future.

Sincerely,

Boyd G. Stephens, M.D.
Chief Medical Examiner

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INTRODUCTION

The **Medical Examiner** is appointed by law to many responsibilities, the foremost of which is the investigation and certification of a variety of deaths, including all deaths of other than natural causation, and any apparently natural deaths in which no physician can reasonably state the cause. The Medical Examiner can utilize any and all medico-legal investigative techniques, including autopsy, to establish both the medical cause of death, and mode or circumstances of death (natural, accident, homicide, suicide or undetermined).

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5. No physician in attendance
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8. Occupational or industrial deaths
9. All deaths where a patient has not fully recovered from an anesthetic, whether in surgery, recovery room, or elsewhere
10. All deaths in operating rooms
11. All solitary deaths (unattended by physicians or other person in the period immediately preceding death)
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13. All deaths of unidentified persons
14. All deaths in which there are grounds to suspect that the death occurred in any degree from a criminal act
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17. All deaths associated with a rape - known or alleged - or crime against nature
18. All deaths related to or following abortion - known or suspected
19. All deaths involving drowning, fire, hanging, gunshot, stabbing, cutting, starvation, exposure, alcoholism, drug addiction, strangulation or aspiration

Additional mandated responsibilities include protecting and safekeeping of property belonging to deceased individuals, conducting inquests when indicated, maintaining proper public records, making reports to other agencies, identification of deceased persons, interment of indigent dead, and many other death related activities.

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FORENSIC MEDICINE

Forensic medicine generally is considered to be a marriage of medicine and the forensic sciences oriented to medico-legal issues. The field is wide-ranging and growing, becoming even broader in scope than the traditional concept as practiced in Europe. As a Medical Examiner, we commonly examine living persons for medico-legal purposes, often interpreting the findings for court purposes.

There has been continued growth and accentuation of the role of forensic medicine in the legal and medico-legal world over the past year. This office has continued its role in forensic medicine for both living and dead, playing a vital role in the community.

We serve in a number of places in the community. Some of these include:

Examination and diagnosis of the living:

- Examination and evaluation of child abuse
- Examination and evaluation of sexual assault injuries
- Examination and evaluation of spousal abuse
- Evaluation of citizens' complaints against the Police Department
- Testimony and interpretation of hospital records and procedures
- Evaluation of force and patterned injuries
- Examination of victims and suspects for trace evidence and injuries
- Collection of blood from suspects and victims for serology, toxicology and other testing
- Court testimony on force, great body injury (GBI) and other issues
- Alcohol and drug interaction in driving under the influence cases and related issues
- Physiologic effects of drug interactions
- Toxicology, including environmental and industrial toxicities
- Teaching - hospitals, forensic, law enforcement, community
- Analysis for drugs on individuals on probation
- Analysis for drugs on management control cases for the County

Examination and evaluation of the dead:

- Scene investigation, reconstruction and analysis
- Evidence collection and testing
- Blood spatter analysis and interpretation
- Patterned evidence analysis and interpretation
- Trace evidence collection
- Time and place of death information
- Forensic autopsy - consultation and interpretation
- Analysis for chemical and limited serology testing
- Forensic toxicology
- Consultation with District Attorney and Public Defender
- Reconstruction Analysis and court presentation
- Teaching - forensic and legal

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DEPARTMENT STATUS AND FUTURE
2004-2005

As a Medical Examiner's system, our primary mission and responsibilities are two-fold:

First, we are responsible for helping to protect the public health by recognizing and identifying infectious diseases, medical diseases or poor medical treatment that could adversely affect the community. We look for known infectious diseases, emerging new diseases, potential terrorist-initiated disease or poisons, the quality of acute medical care and the quality of long-term care for our citizens. We work closely with the County health department as well as the health services departments for the State and Federal governments.

Second, we are responsible for the practice of forensic medicine in the County. Our purpose is to determine the cause, circumstances and manner of certain deaths that fall within the legal jurisdiction of the Medical Examiner. We search for any indication of injuries or death caused by another person. We differentiate suicidal from accidental manner. We use forensic toxicology to search for drugs and poisons. Using our skills and training, we recognize and collect evidence for potential use in the criminal justice system and in the investigation and adjudication of a crime. We recognize abuse in the young and in the elderly. We use this information to work with other agencies to affect an improved and safer community. We testify as medical experts on forensic toxicology, medicine, pathology and physical or drug abuse on living and deceased people. We perform the forensic toxicology on people who are applying for certain defined jobs with the County or on those persons who are interacting with the legal system in some way, such as driving while intoxicated investigations. Some of this work is important in criminal investigations, such as those involving domestic violence and homicides. There is no other facility that has the staffing, instruments, or skilled personnel to do this work within the County.

An adequate budget to run the department and adequate staffing to effectively perform forensic medicine for the County remain the two major issues for the present and for the foreseeable future. With the series of past budget deficits, there has been a continuous reduction in both funding and staffing. There are significant limits to potential income generation by our department and the highly skilled personnel required by the Medical Examiner are in short supply. For the first time in the history of the office, we have had to permanently stop performing forensic autopsies on weekends and holidays. Besides the great difficulties this change causes for families, the resulting workload on the next working day is frequently enormous. The heavy workload stresses staff, reduces the quality of investigations, delays the completion of the official death certificate, interferes with the judicial system, and leads to delays in funerals. We are forced into making medical judgments on cases with limited information available because of our own staff reductions and staff reductions in our local hospitals. We have also been forced to stop or reduce training in the local hospitals and organizations. These staff and budget reductions need to be reversed as soon as the budget will allow.

As has been evident in previous reports, recruitment and retention of professional and investigative staff remains a primary difficulty for our department. Our salaries are not competitive with many other jurisdictions, our cost of living is among the highest in the nation, and our staffing level is so low that the individual workload is high. The pool of specially trained individuals in the forensic sciences or death investigation field is small. There are only about 400 working forensic pathologists in the nation, practically no forensic toxicologists and few qualified medico-legal investigators. We can offer no incentives or signing bonuses, and we cannot help with any moving expenses. Additionally, the complexities of our hiring and regulatory system are so great the simple personnel matters take weeks or years to complete. That complexity makes rapid adjustment to the competitive recruitment process very difficult. Our system is inflexible, unable to respond promptly and does not comply with the normal educational moving cycle calendar that is common to these positions.

These same requirements are not true for many other jurisdictions which can offer training, moving, education and staff incentives as they see fit for the particular person they are trying to recruit. They can make a firm commitment to hire and do so almost immediately without going through a committee. The cost of living, crime, automobile insurance, and children's schooling are all more favorable in other jurisdictions. A home that is much larger and grander is typically within reach. Crime rates are lower. As a result, we usually recruit young people right out of someone else's training program, polish their forensic medicine abilities, and then see them leave for a better and more rewarding position elsewhere. Even with the assistance of a professional recruiting firm, we are constantly looking for new people. Until we can return to our own training program and reduce the delays inherent in our County hiring system, I suspect that we are doomed to repeat the same scenario again and again.

Maintaining our computers and scientific instruments at a modern and current level is another large challenge. Technology and instrumentation in the forensic sciences change and improve rapidly. Sometimes five year old and typically ten year old instruments represent outdated technology and are often physically unsupportable. These specialty instruments are often very expensive and require a considerable amount of training, support and skill to operate them efficiently. The forensic sciences are advancing rapidly and with the general use of DNA technology, the change affects all branches of medicine.

Our facility is adequate. The aging building has stood up well, thanks to the original design of Dr. Henry Turkel. However, many physical or legal requirements that have developed over the forth years since the building was built indicate the need for a new facility in the future. Many of those scientific, regulatory and equipment requirements simply didn't exist in the 1960s when this building was designed and constructed.

Our future efforts are to get the department fully funded and staffed, to restart our forensic pathology training program, to start a forensic toxicology training program, to improve our instruments and equipment, to get fully prepared for a potential disaster of any kind, and to improve the training of our staff. We plan to continue to work in the areas of reducing infant and children's deaths from disease, violence and SIDS, reducing domestic and elder violence, and supporting drug intervention programs. At full staffing, we could restart our forensic pathology fellowship program, return to teaching in the local hospitals and improve relations with the many agencies we interact with on a daily or weekly basis. We could return to a weekly and monthly training program for our own and other departments in the fields of forensic science. These programs benefit the community in many ways, including simply improving the quality of medical and forensic care within the City. Again, that is our primary mission.

DEPARTMENTAL COSTS
FISCAL YEAR 2002 – 2003

Total Budget	$4,214,853.00
Transfers to Controller: Health and Retirement.	$576,223.00
Net Budget (all other costs)	$3,638,630.00
Total Cases	4,373
Cost Per Case Investigated.	$832.07
Revenues (sales of records, public auctions, fee-for-service work)	$280,170.00
Total Costs Ad Valorum Taxes Per Case Investigated	$768.00

As indicated elsewhere, this includes all investigative, administrative, scientific and expert witness costs to the County.

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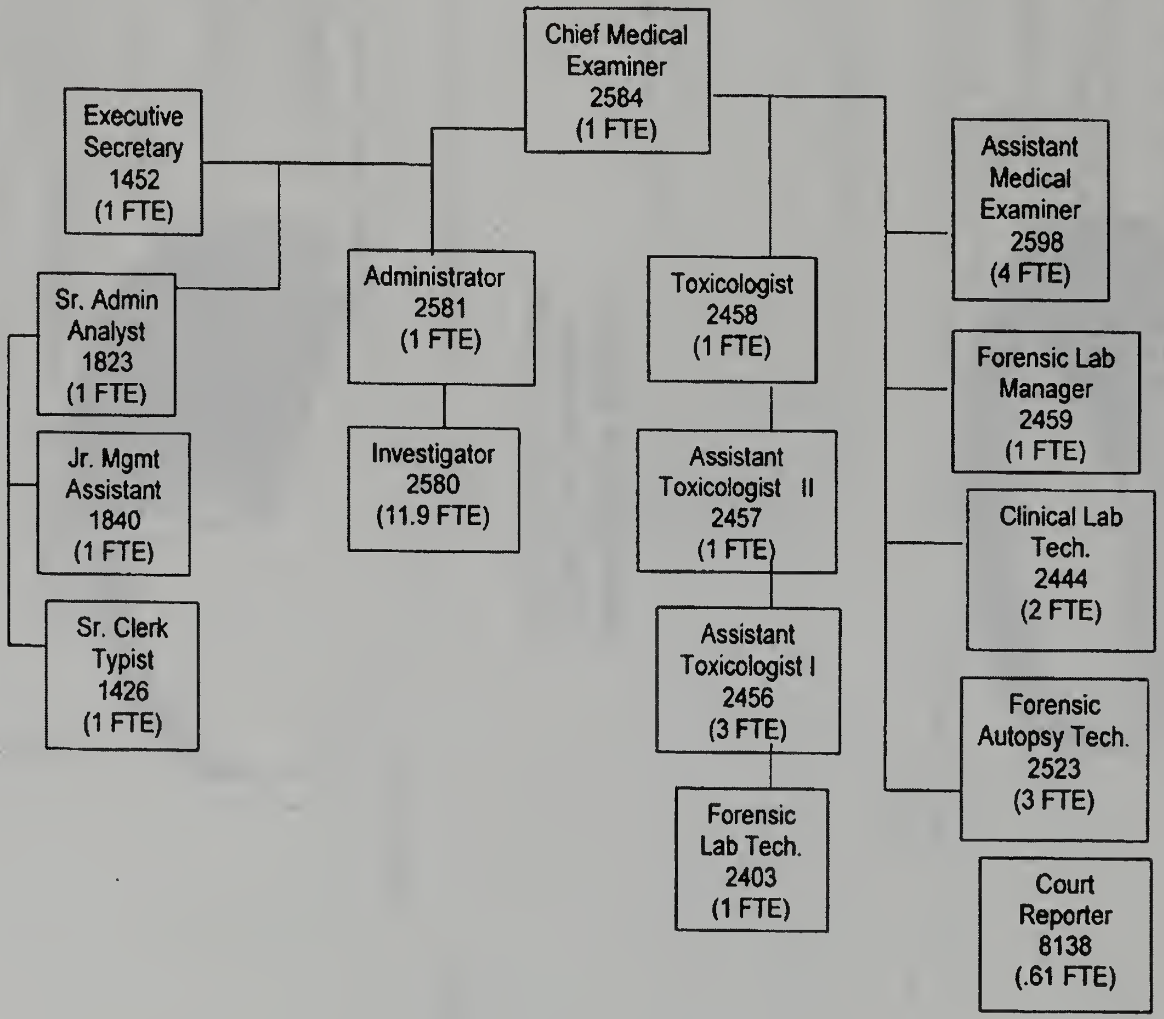
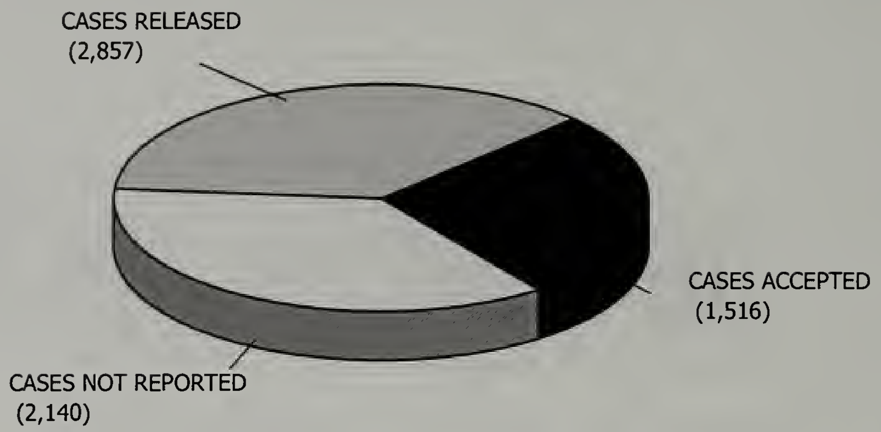
SAN FRANCISCO MEDICAL EXAMINER'S OFFICE
ORGANIZATION CHART


Chief Medical Examiner 2584 (1 FTE)
Executive Secretary 1452 (1 FTE)
Sr. Admin Analyst 1823 (1 FTE)
Jr. Mgmt Assistant 1840 (1 FTE)
Sr. Clerk Typist 1426 (1 FTE)
Administrator 2581 (1 FTE)
Investigator 2580 (11.9 FTE)
Toxicologist 2458 (1 FTE)
Assistant Toxicologist II 2457 (1 FTE)
Assistant Toxicologist I 2456 (3 FTE)
Forensic Lab Tech. 2403 (1 FTE)
Assistant Medical Examiner 2598 (4 FTE)
Forensic Lab Manager 2459 (1 FTE)
Clinical Lab Tech. 2444 (2 FTE)
Forensic Autopsy Tech. 2523 (3 FTE)
Court Reporter 8138 (.61 FTE)

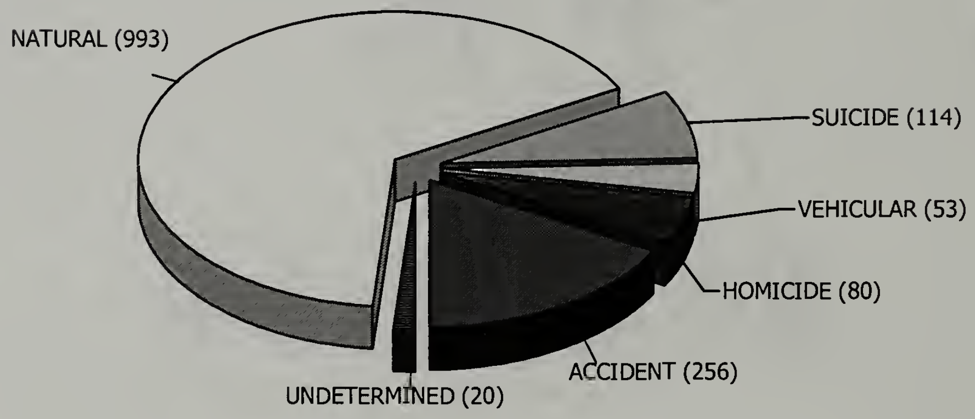
COUNTY DEATHS
FISCAL YEAR 2002-2003

Figure 1.



MANNER OF DEATH
FISCAL YEAR 2002-2003
JURISDICTION ON 1,516 CASES

Figure 2.



FISCAL YEAR 2002-2003

Total Deaths in County
6,513*

Total Deaths Reported to Medical Examiner	4,373
Cases Reported, Investigated and Cleared by the Medical Examiner for physician's signature	2,857
Medical Examiner's Cases	1,516

% County Deaths Reported to Medical Examiner	67.1 %
% County Deaths Having Medical Examiner's Jurisdiction	23.3 %

Cases Accepted by the Medical Examiner (by manner of death) **

1. Natural Deaths (NC)	988	(65.2%)
2. Accidents (ACC)	256	(16.9%)
3. Suicides (SUI)	114	(7.6%)
4. Homicides (HOM)	80	(5.3%)
5. Mode Undetermined (UND)	20	(1.3%)
6. Sudden Infant Death Syndrome (SIDS)	5	(0.3%)
7. Vehicular (VEH)	53	(3.5%)

Autopsy Index

Full Autopsy	48%
Partial Autopsy/External Examination/Record Review ***	52%

Dispositions Authorized by the Medical Examiner

Indigents and fetus dispositions		177
Adults	173	
Infants	4	

Inquests Held	1

Identification

Persons brought to Medical Examiner's Office with insufficient identification	158
Persons subsequently identified by fingerprints, dental X-rays or other means	158
Persons interred as unidentified	0
Fingerprints taken and forwarded to FBI, CII, or SFPD	445

This number represents cases registered with the San Francisco Department of Public Health during fiscal year 2002-2003.

The abbreviations following each manner of death will be used in most tables in this report.

* Includes 142 indigent cases, all of whom were externally examined by a Medical Examiner's Investigator.

EXAMINATIONS AND REFERRALS

FISCAL YEAR 2002-2003

Examinations

Suspected child abuse	4

Specimens submitted for toxicology testing from living individuals

Living victims or defendants in violent crimes	45
Management control - other City departments	793
DUI suspects	690

MEDICAL EXAMINER CASES
FISCAL YEAR 2002-2003

In fiscal year 2002-2003, there were 6,513 deaths registered in San Francisco County. Of these deaths, 4,373 were reported to the San Francisco Medical Examiner's Office. The Medical Examiner's Investigators examined the previous medical history, circumstances surrounding the deaths and, in many cases, the scene of the death, and determined that 1,516 of these deaths came under the jurisdiction of this office. (See Figure 1, page 10). Full or partial autopsies or external examinations were performed on all cases.

1. The highest total **number of deaths** occurred in January 2003. The highest number for the various manners of death occurred during other months (e.g., highest number of homicides in June 2003, the highest numbers of vehicular deaths in January 2003, and non-vehicular accidents in November 2002). See Table I and Figure 3, page 14.

2. The **racial distribution** for each manner of death was quite variable. For example, the value of the ratio of Whites/Blacks was 3.8 overall, 4.9 for accidents, 15.3 for suicides, and 1.2 for homicides. See Table II, page 15 and Figure 5, Page 17.

3. The **age range distribution** for each manner of death was also variable. For example, the highest number of accidental deaths, vehicular deaths and suicides occurred in the 40-49 year age group, and the highest number of homicides occurred in the 20-29 year age group. See Table III, page 15.

4. The **overall distribution** of deaths by sex (ratio of male/female) was 2.2, but this varied by manner of death from 7.0 in deaths due to homicides to 1.3 in vehicular deaths. See Table IV and Figure 4, page 16.

MEDICAL EXAMINER CASES FOR 2002-2003

TABLE I. MANNER OF DEATH - MONTHLY COMPARISON

	Manner of Death							
Month of Deatl	ACC	HOM	SUI	NC	VEH*	SIDS*:	UND	TOTALS
July	23	9	11	77	3	1	3	127
August	22	5	7	106	3	1	4	148
September	20	5	10	74	2	0	0	111
October	24	8	11	75	7	0	0	125
November	28	5	7	61	4	0	1	106
December	20	4	6	96	7	0	1	134
January	21	1	10	110	8	1	2	153
February	14	10	6	71	3	0	2	106
March	18	10	14	75	2	2	3	124
April	26	4	9	91	6	0	1	137
May	23	7	10	82	3	0	2	127
June	17	12	13	70	5	0	1	118
TOTALS	**256**	**80**	**114**	**988**	**53**	**5**	**20**	**1,516**

* = Vehicular Death. These include 9 cases ruled to be homicide, 43 cases ruled to be accidental, and 1 ruled to be suicide.

** = Sudden Infant Death Syndrome

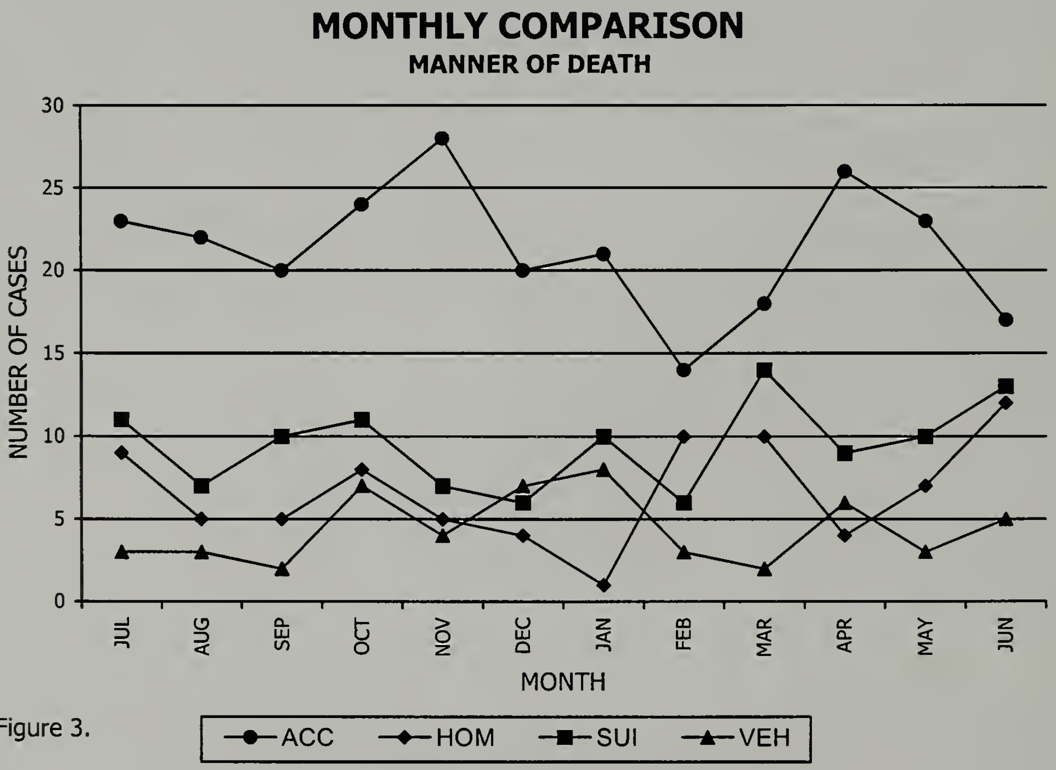


Figure 3.

TABLE II. MANNER OF DEATH BY RACE

Manner of Death

Race	ACC	HOM	SUI	NC	VEH*	SIDS	UND	TOTALS
White	188 (73%)	40 (50%)	92 (81%)	673 (68%)	31 (58%)	1 (20%)	16 (80%)	1,041 (69%)
Black	38 (15%)	33 (41%)	6 (5%)	189 (19%)	4 (8%)	2 (40%)	3 (15%)	275 (18%)
Asian	27 (11%)	6 (8%)	14 (12%)	108 (11%)	18 (34%)	2 (40%)	1 (5%)	176 (12%)
Other / Unknown	3 (1%)	1 (1%)	2 (2%)	18 (2%)	0	0	0	24 (2%)
TOTALS	**256**	**80**	**114**	**988**	**53**	**5**	**20**	**1,516**

TABLE III. MANNER OF DEATH BY AGE

Manner of Death

Age Group	ACC	HOM	SUI	NC**	VEH *	UND	TOTALS
0-11 months	4	0	0	16	0	1	21
1-5 years	2	1	0	0	1	0	4
6-12 years	0	1	0	0	0	1	2
13-16 years	0	1	0	0	0	0	1
17-19 years	1	8	0	0	0	1	10
20-29 years	25	25	18	11	7	2	88
30-39 years	45	22	23	40	8	1	139
40-49 years	64	5	29	149	12	6	265
50-59 years	50	11	20	231	9	5	326
60-69 years	18	3	7	176	7	3	214
70-79 years	21	0	11	181	5	0	218
80-89 years	12	2	5	138	2	0	159
90 + years	14	1	1	50	2	0	68
Unknown	0	0	0	1	0	0	1
TOTALS	**256**	**80**	**114**	**993**	**53**	**20**	**1,516**

* = Vehicular Death. These include 9 cases ruled to be homicide, 43 cases ruled to be accidental, and 1 ruled to be suicide.

** = Includes 5 SIDS (Sudden Infant Death Syndrome) deaths.

TABLE IV. MANNER OF DEATH BY SEX

	Manner of Death							
Sex	**ACC**	**HOM**	**SUI**	**NC**	**VEH***	**SIDS**	**UND**	**TOTALS**
Male	168	70	91	673	30	2	9	1,043
Female	88	10	23	314	23	3	11	472
Unknown	0	0	0	1	0	0	0	1
TOTALS	**256**	**80**	**114**	**988**	**53**	**5**	**20**	**1,516**

* = Vehicular Deaths. These include 9 cases ruled to be homicide, 43 cases ruled to be accidental, and 1 ruled to be suicide.

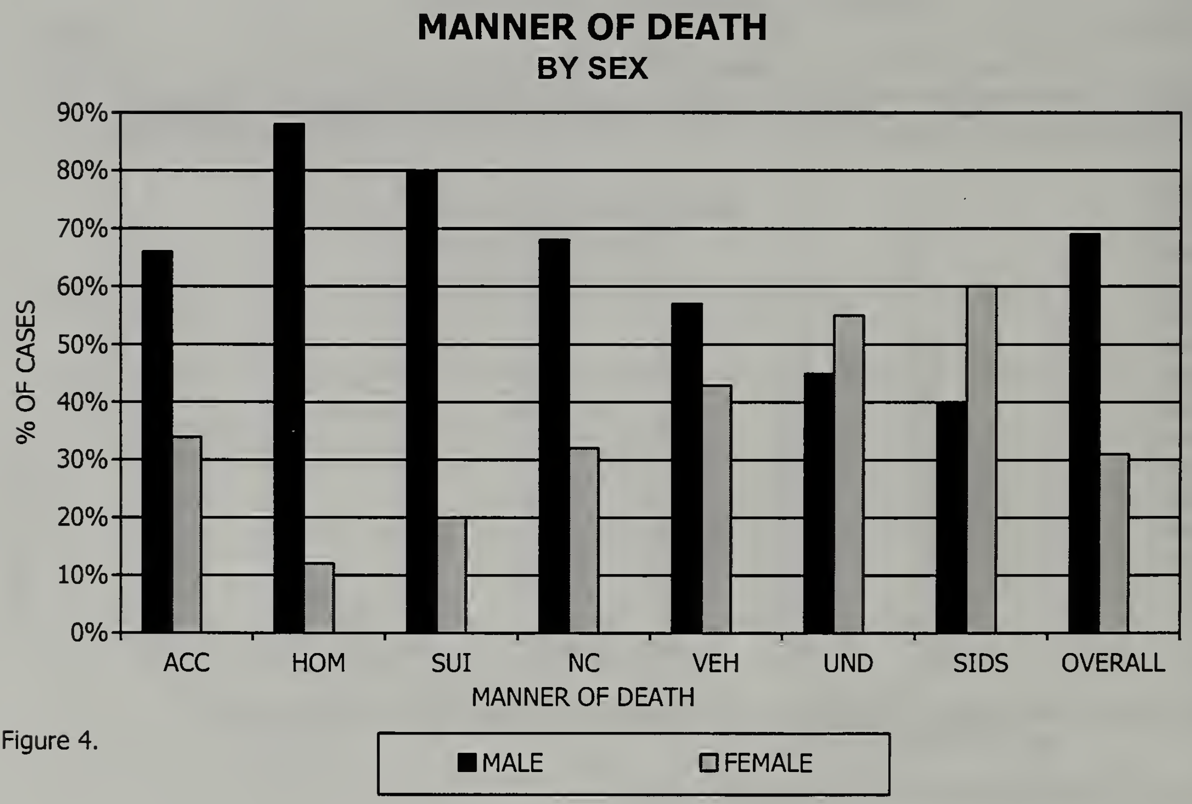


Figure 4.

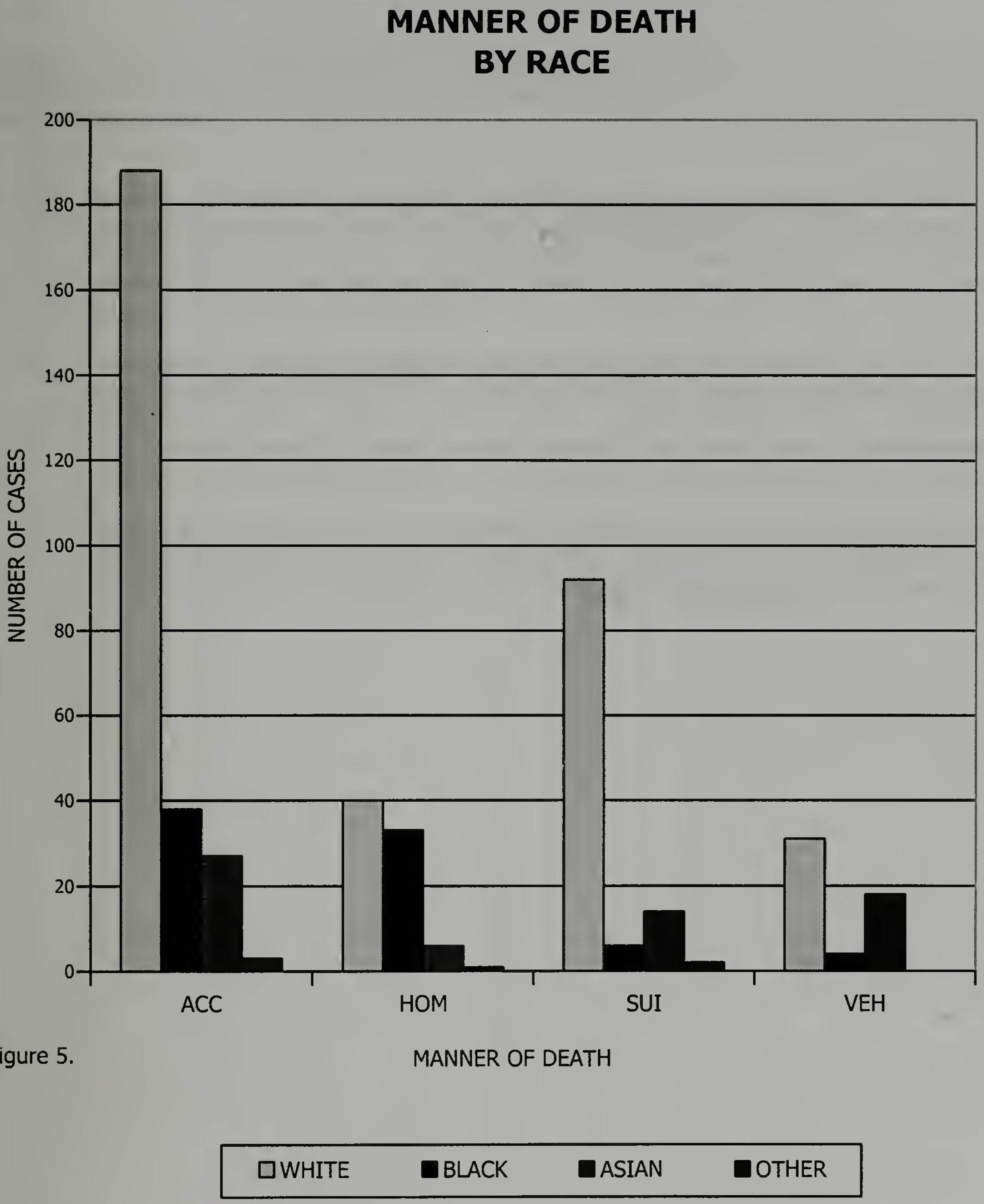

MANNER OF DEATH
BY RACE
NUMBER OF CASES
200
180
160
140
120
100
80
60
40
20
0
ACC
HOM
SUI
VEH
MANNER OF DEATH
☐ WHITE
■ BLACK
■ ASIAN
■ OTHER

Figure 5.

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YEARLY COMPARISON OF MEDICAL EXAMINER'S CASES

Comparisons of manners of death as well as methods used over the last ten fiscal years, where available, are presented in this section. The most significant differences that have occurred over the last ten years which can be observed in these tabulations include:

1. Regarding **manners of death**, the number of non-vehicular homicides (80) during fiscal year 2002-2003 was the highest number seen since 1995-1996 and the number of cases ruled to be suicide (114) was the highest seen since 1996-1997. The total number of vehicular deaths (53) was the lowest number seen, of those years where data were available, in the last 10 fiscal years. (See Table V and Figure 6, page 20, Figure 2, page 10, and Figure 10, page 24).
2. With respect to **methods used in homicides,** deaths from firearms account for the largest percentage of homicides (62% in 2002-2003). (See Table VI and Figure 7, page 21 and Figure 24, page 57).
3. There were no notable consistent changes or trends in the total number of **suicidal deaths** or in the types of suicides over the last 10 fiscal years. (See Table VII and Figure 8, page 22, and Figure 24, page 57).
4. Regarding **deaths ruled to be accidental**, deaths from drug overdoses are the leading cause of death. However, the number of deaths from drug overdoses in 2002-2003 (140) was the lowest in the last 10 fiscal years for which data are available. (See Table VIII and Figure 9, page 23, and Figure 24, page 57).

YEARLY COMPARISONS OF MEDICAL EXAMINER'S CASES

TABLE V. YEARLY COMPARISON OF MANNER OF DEATH

Fiscal Year

Manner of Death	'93-'94	'94-'95	'95-'96	'96-'97	'97-'98	'98-'99	'99-'00	'00-'01	'01-'02	'02-'03
Accident	270	296	319	283	349	307	281	276	255*	256
Homicide	118	94	98	63	75	59	60	66	78*	80
Suicide	136	124	156	139	111	90	101	111	95	114
Natural	831	925	1,118	1,034	1,086	1,075	959	908	987	993
Vehicular	54	80	58	56	76	60	72	71	N/A	53
Undetermined	42	30	40	44	36	30	44	36	20	20
TOTALS	**1,451**	**1,549**	**1,789**	**1,619**	**1,733**	**1,621**	**1,517**	**1,468**	**1,435**	**1,516**

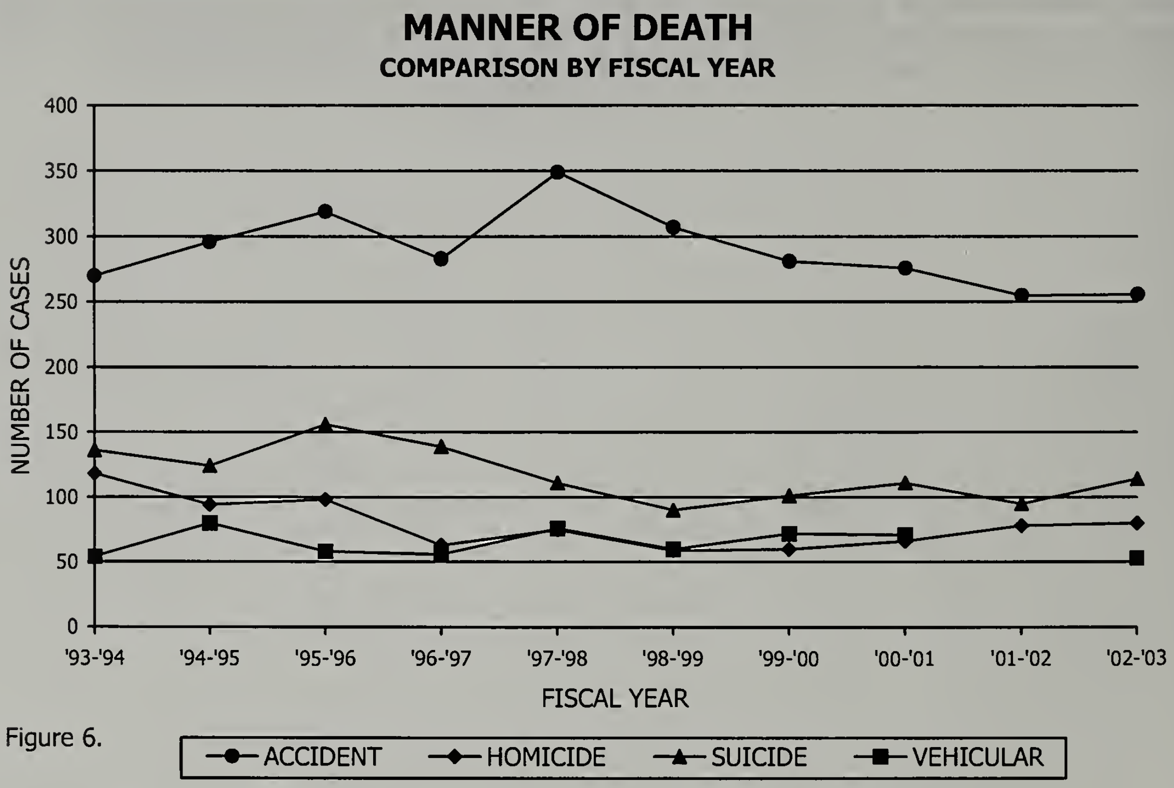

Figure 6.

* = Please note: For 2001-2002, vehicular deaths are included in the accident or homicide totals and were not calculated separately.

TABLE VI. YEARLY COMPARISON OF HOMICIDE METHODS USED

	Fiscal Year									
	'93-'94	'94-'95	'95-'96	'96-'97	'97-'98	'98-'99	'99-'00	'00-'01	'01-'02	'02-03
Firearms	83	68	59	47	46	35	41	n/a	n/a	55
Stabbing	18	14	16	6	18	10	8	n/a	n/a	9
Traumatic Injury	12	9	18	8	8	8	7	n/a	n/a	14
Vehicular	11	6	2	11	7	9	11	12	n/a	9
Asphyxia/Strang.	1	3	3	1	3	3	0	n/a	n/a	0
Other	4	0	2	1	0	3	4	n/a	n/a	2
TOTALS	**129**	**100**	**100**	**74**	**82**	**68**	**71**	**78**	**78**	**89**

n/a = information not available

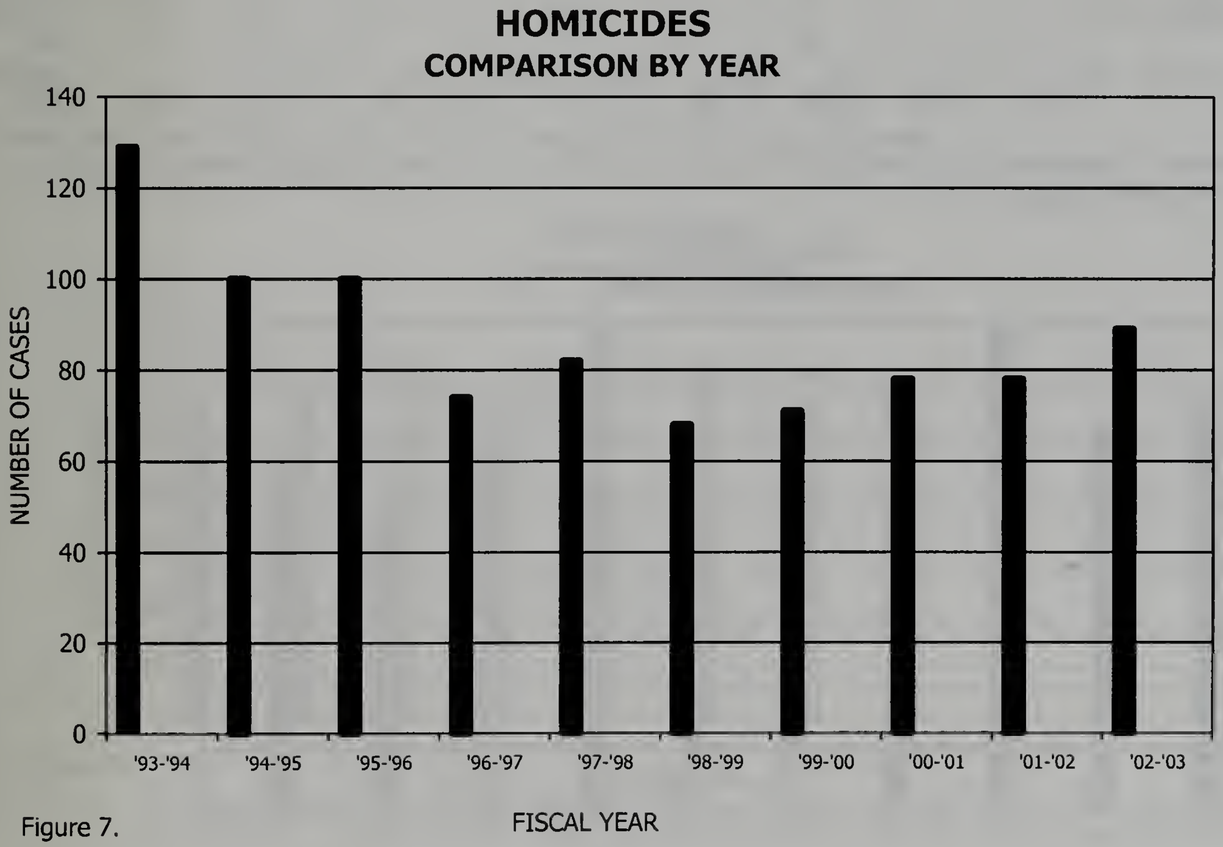

Figure 7.

TABLE VII. YEARLY COMPARISON OF SUICIDE METHODS USED

	Fiscal year									
Method Used	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**	**'98-'99**	**'99-'00**	**'00-'01**	**'01-'02**	**'02-'03**
Burning	1	4	0	1	0	2	1	n/a	n/a	0
CO Poisoning	3	1	3	1	2	1	1	n/a	n/a	2
Cutting/Stabbing	8	5	2	4	5	4	4	n/a	n/a	2
Drowning	1	3	9	5	4	2	0	n/a	n/a	3
Drugs/Poisons	25	37	49	31	27	25	24	n/a	n/a	27
Firearms	44	24	45	33	21	19	26	n/a	n/a	25
Hanging	22	19	19	30	32	19	24	n/a	n/a	22
Jump - Bay Bridge	5	2	1	2	1	3	0	n/a	n/a	1
Jump - Building	12	19	10	22	10	10	13	n/a	n/a	14
Jump - G.G. Bridge*	3	1	4	1	1	2	4	n/a	n/a	6
Jump - Other	3	0	1	0	1	0	1	n/a	n/a	3
Suffoc./Asphyxia	9	7	13	7	7	2	3	n/a	n/a	7
Vehicular/BART/Train	0	0	2	1	0	2	3	4	n/a	1
Other	0	2	0	2	0	1	0	n/a	n/a	2
TOTALS	**136**	**124**	**158**	**140**	**111**	**92**	**104**	**115**	**95**	**115**

*Starting midway in fiscal year 91-92, most Golden Gate Bridge suicides were handled by Marin County
n/a = information not available

SUICIDES
COMPARISON BY YEAR

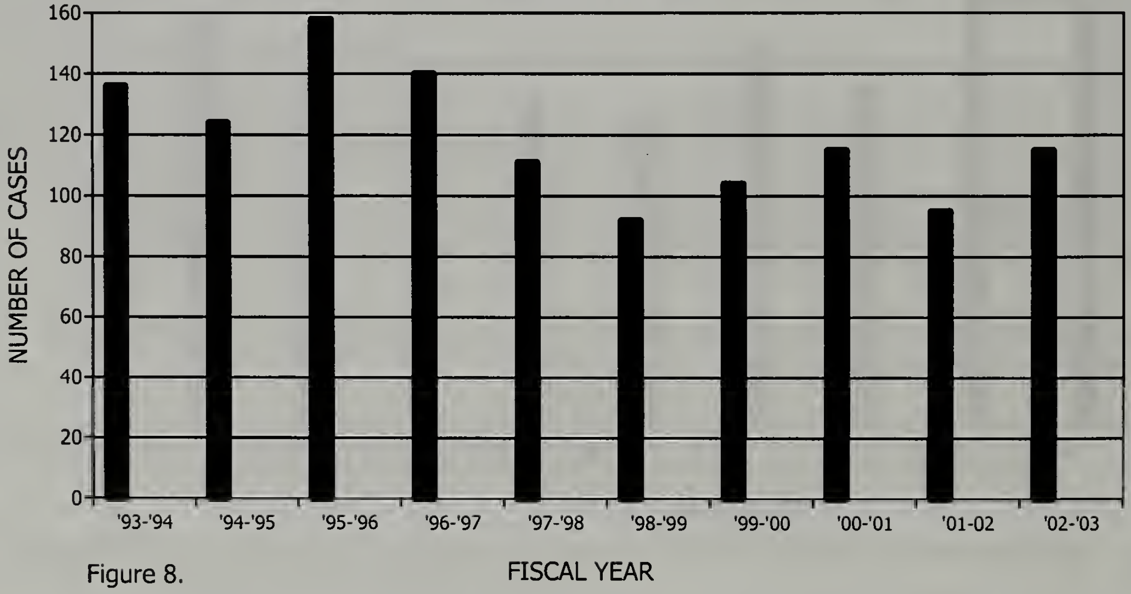

Figure 8.

TABLE VIII. YEARLY COMPARISON OF ACCIDENTAL DEATH SITUATIONS

	Fiscal year									
Situation	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**	**'98-'99**	**'99-'00**	**'00-'01**	**'01-'02**	**'02-'03**
Asphyxia	5	2	11	15	11	5	12	n/a	n/a	13
Aspiration	12	17	2	2	10	1	7	n/a	n/a	4
Burns	8	7	5	9	9	4	7	n/a	n/a	7
Drowning	11	6	5	10	9	6	8	n/a	n/a	5
Drug Reactions	1	3	0	2	0	7	9	n/a	n/a	0
Drug/Alc. Abuse Relat.	9	5	5	2	0	22	19	n/a	n/a	12
Drugs/Poisons	158	169	210	166	199	182	150	n/a	n/a	140
Falls	48	59	48	54	71	52	49	n/a	n/a	53
Firearms	2	2	1	0	0	0	0	n/a	n/a	1
Hanging	1	1	2	0	0	0	2	n/a	n/a	2
Head Trauma	1	4	3	0	1	2	2	n/a	n/a	4
Medical Misadventure	5	6	13	13	20	15	8	n/a	n/a	7
Smoke/CO Inhal.	2	7	8	10	15	4	4	n/a	n/a	2
Other	7	8	6	0	4	7	4	n/a	n/a	6
TOTALS	**270**	**296**	**319**	**283**	**349**	**307**	**281**	**276**	**255***	**256**

* Please note: The accident total for 2001-2002 includes accidental vehicular deaths
n/a = information not available

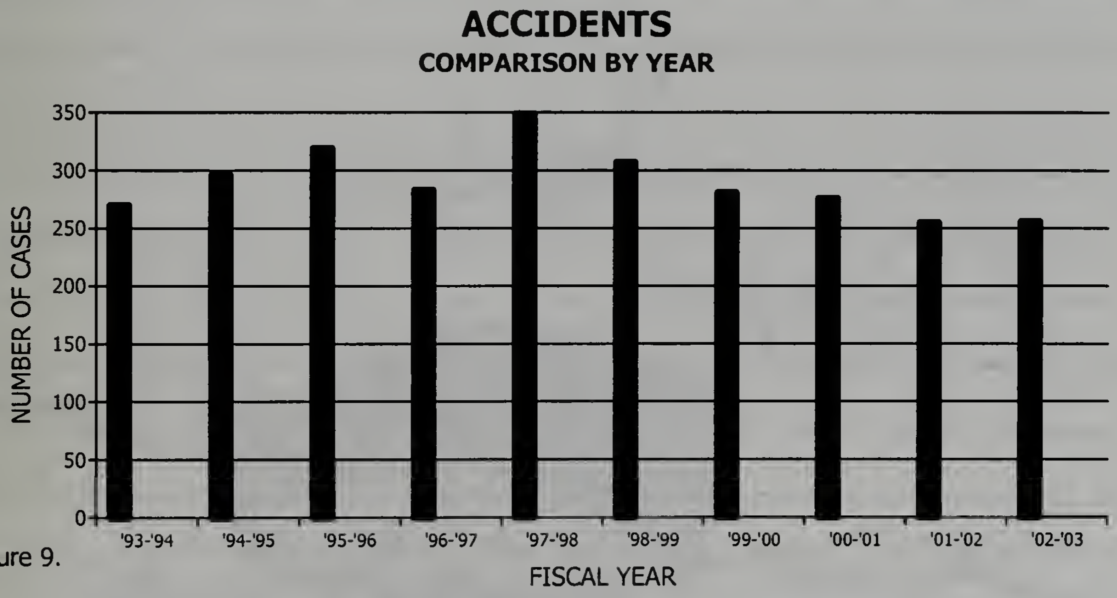

Figure 9.

Table IX. NUMBER OF VEHICULAR FATALITIES BY TYPE

	Fiscal Year									
Situation	**'93-'94**	**'94-'95**	**'95-'96**	**'96-'97**	**'97-'98**	**'98-'99**	**'99-'00**	**'00-'01**	**'01-'02**	**'02-'03**
Pedestrian	29	36	27	23	43	32	39	n/a	n/a	31
Bicycle Driver	1	4	3	5	3	2	3	n/a	n/a	3
Auto Driver	9	19	13	9	8	14	12	n/a	n/a	9
Auto Passenger	8	10	6	11	9	7	3	n/a	n/a	1
Motorcycle Driver	6	6	7	5	9	5	7	n/a	n/a	4
Motorcycle Pass.	0	0	0	0	0	0	0	n/a	n/a	1
Truck Driver	1	1	1	2	2	0	1	n/a	n/a	2
Truck Passenger	0	2	1	0	0	0	3	n/a	n/a	2
Other/Unknown	0	2	0	1	2	0	4	n/a	n/a	0
TOTALS	**54**	**80**	**58**	**56**	**76**	**60**	**72**	**71**	**n/a**	**53**

n/a = information not available

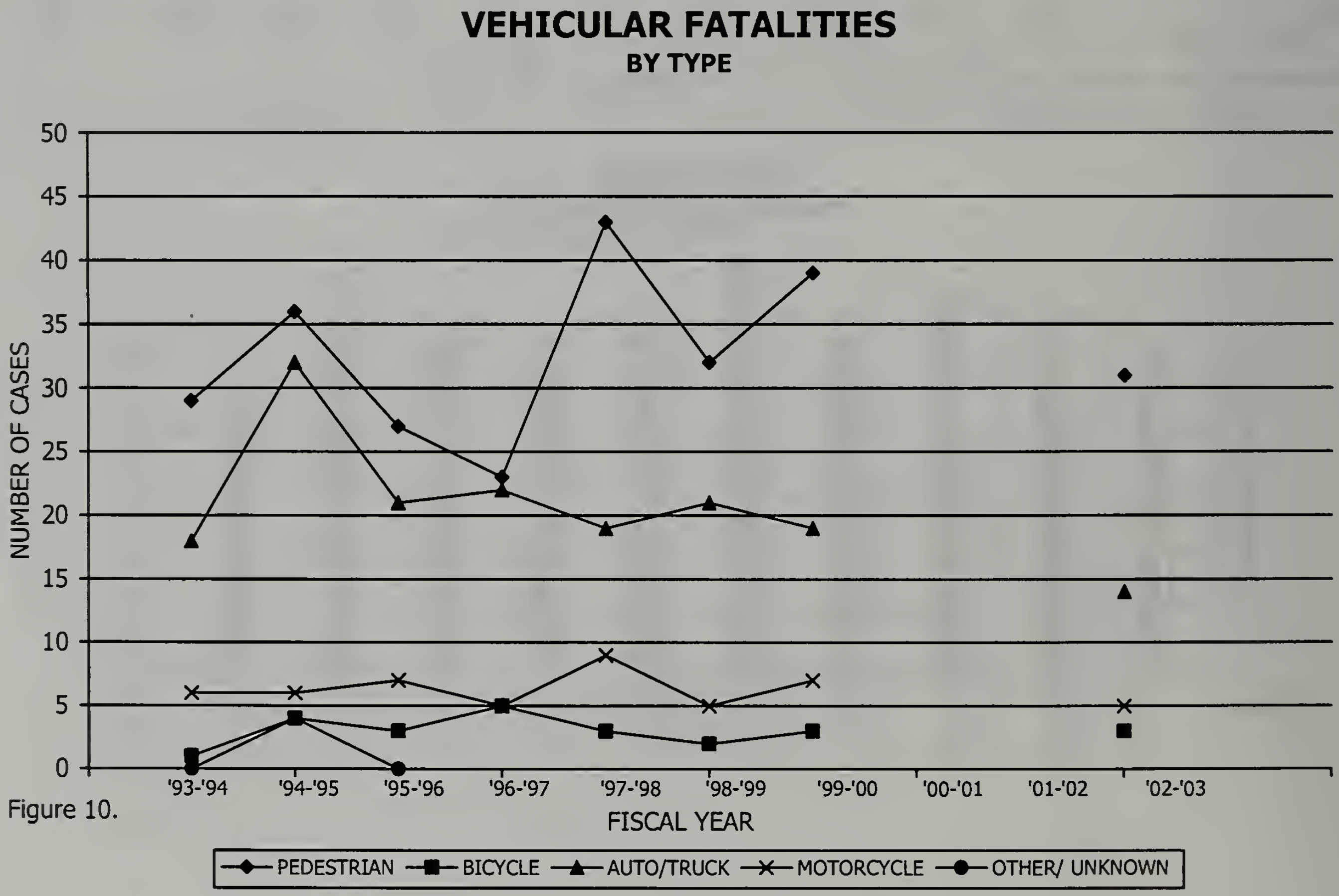

Figure 10.

TABLE X. VIOLENT DEATHS

Of the 1,516 deaths investigated by the Medical Examiner's Office during 2002-2003, 523 were determined to be the result of violence.

Mode	Total Number	% of Medical Examiner Cases	% of County Deaths
ACCIDENT	**299**	**19.7**	**4.6**
Vehicular	43	2.8	
Non-Vehicular	256	16.9	
SUICIDES	**115**	**7.6**	**1.8**
Vehicular	1	0.1	
Non-Vehicular	114	7.5	
HOMICIDE	**89**	**5.9**	**1.4**
Vehicular	9	0.6	
Non-Vehicular	80	5.3	
MODE UNDETERMINED	**20**	**1.3**	**0.3**
Vehicular	0	0	
Non-Vehicular	20	1.3	

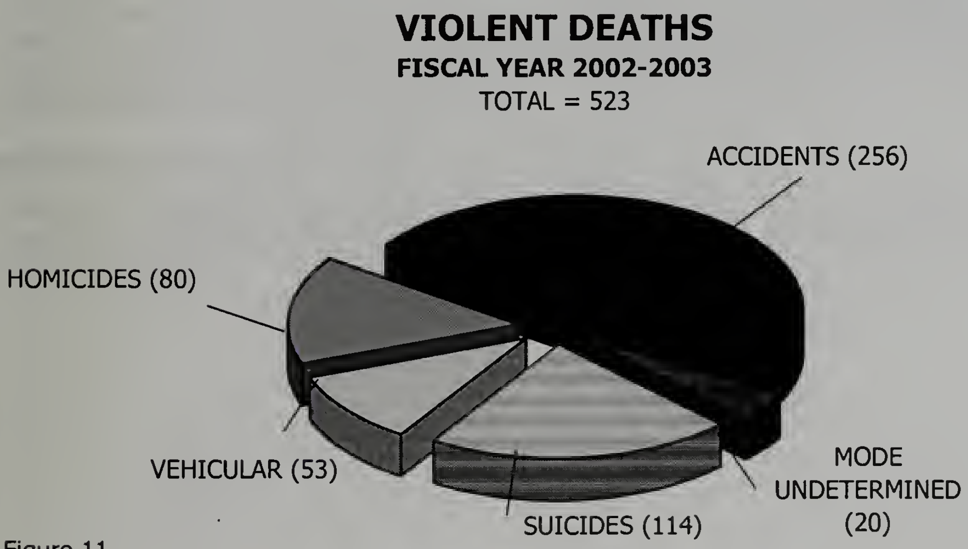

Figure 11.

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ACCIDENTAL DEATHS

Two hundred and ninety-nine (299) deaths were ruled to have been due to accidental means during the 2002-2003 fiscal year. Of these, 256 were non-vehicular accidental deaths. The numbers of individuals dying by each manner of accidental death are indicated in Figure 12, page 28 and Table XI, page 29, and the percentages of all accidental deaths represented by each manner are indicated on Table XI, page 29.

Of the accidental death victims tested for alcohol and drugs (i.e. those in the hospital for less than 24 hours), many had significant levels of alcohol in their blood; some had abuse drugs present (See Table XI, page 29).

Abuse Drug Involvement (Table XII, page 30)

Overall, the number of times the four most common abuse drugs were found to be present in all non-vehicular accidental death cases was 171. (Note that more than one abuse drug may have been present in a single case). Of the deaths *caused by* drugs, heroin (measured as morphine) was seen most frequently (72 cases). The second most frequently seen abuse drug in deaths *due to* drugs was cocaine (59 cases). Amphetamines were present in deaths *due to* drugs in 21 cases. Abuse drugs may have played a role in accidental deaths due to aspiration, a fall and drowning (1 case each).

Racial Distribution (Figure 13, page 31 and Table XIII, page 31)

Overall, accidental deaths occurred most frequently in Whites. Deaths from hanging and head trauma occurred more frequently in Whites (100%) than would be anticipated by the overall involvement of Whites in accidental deaths (73%). Asians are much less involved in deaths due to drug/poisons (4%) than would be expected by the involvement of Asians in accidental deaths (11%) and are much more heavily represented in deaths due to drowning (40%). Blacks are less heavily represented in deaths by falls (6%) than would be expected based on the general involvement of Blacks in all types of accidental deaths (15%).

Age Distribution (Figure 14, page 32 and Table XIV, page 33)

Asphyxia was the most common cause of accidental deaths in the youngest age groups (0-12 years). There was 1 non-vehicular accidental death, which was due to drugs, in the age group from 13-19 years during 2002-2003. Falls were the most common cause of accidental deaths in people over 60 years of age (70% of all deaths were due to falls). Deaths due to drug overdoses are concentrated in the 30-49 year age group with 62% of all deaths due to drug overdoses occurring in this age group.

Distribution by Sex (Table XV, page 34)

Males are 1.9 times as likely as females to be the victims of non-vehicular accidental deaths. This difference is *more* pronounced in deaths due to drugs and *less* pronounced in deaths due to asphyxiation and aspiration.

NON-VEHICULAR ACCIDENTS

This category includes all unintentional fatalities. There were 256 accidental deaths (non-vehicular) which accounted for 16.9% of the Medical Examiner death investigations for the fiscal year of 2002-2003.

ACCIDENTAL DEATH
(NON-VEHICULAR)
FISCAL YEAR 2002-2003

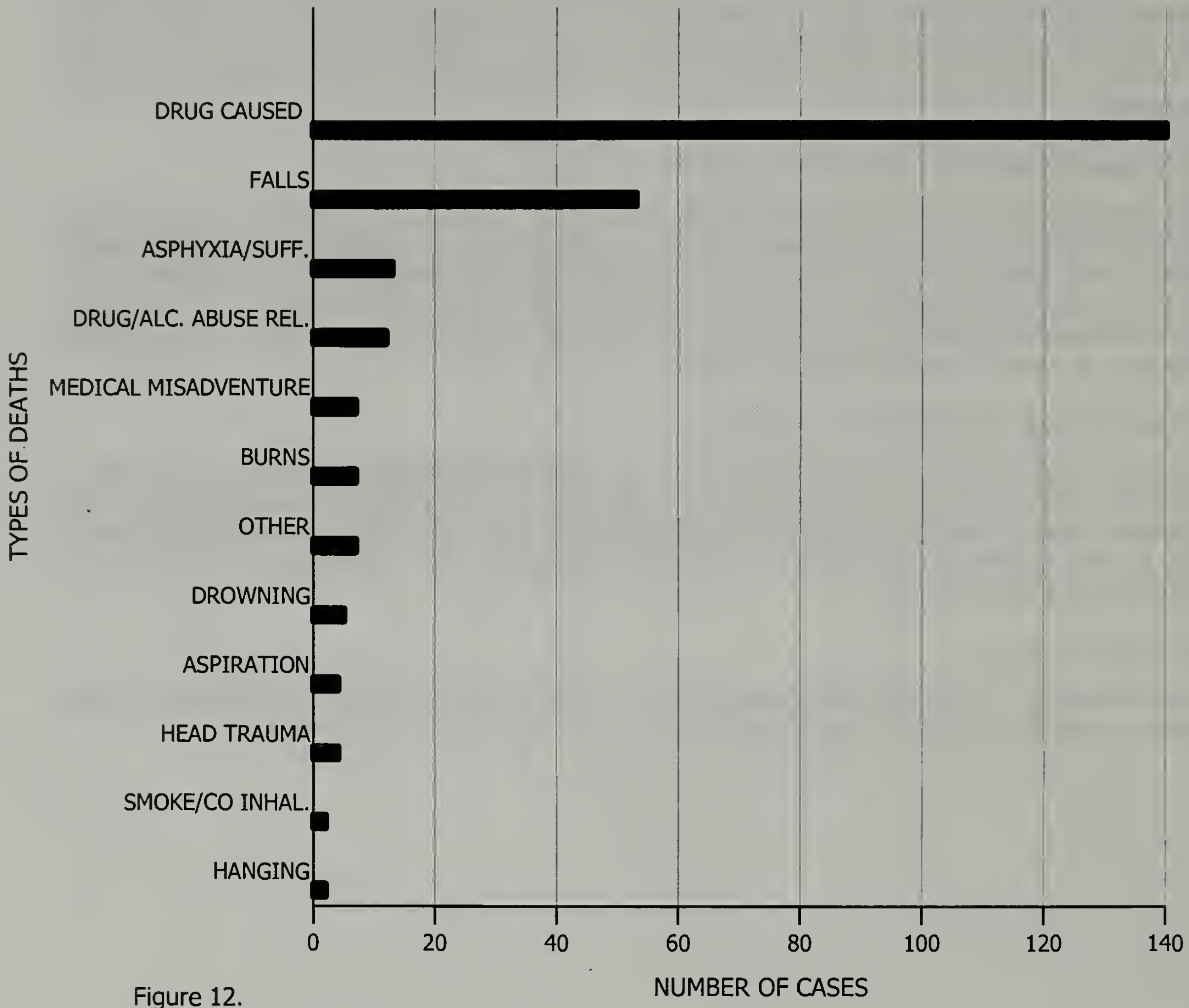

Figure 12.

TABLE XI. ACCIDENTAL DEATHS BY MODE

Drug and Alcohol Involvement

Method	Number	% Of Total Accidents	% With Alcohol *	# Positive (# Tested)	Ave. Alc. Conc. (g%)	% With Drugs **	# Positive (# Tested)
Asphyxia/Suffoc.	13	5.1	40	2 (of 5)	0.09	25	1 (of 4)
Aspiration	4	1.6	67	2 (of 3)	0.08	0	0 (of 3)
Burns	7	2.7	0	0 (of 1)	-	0	0 (of 3)
Drowning	5	2.0	25	1 (of 4)	0.25	25	1 (of 4)
Drug/Alc. Abuse Rel.	12	4.7	20	2 (of 10)	0.26	78	7 (of 9)
Drug Caused	140	54.5	39	52 (of 134)	0.17	71	97 (of 136)
Drug Reactions	0	0	-	-	-	-	-
Falls	53	20.8	35	6 (of 17)	0.18	8	1 (of 13)
Hanging	2	0.8	0	0 (of 1)	-	0	0 (of 1)
Head Trauma	4	1.6	67	2 (of 3)	0.20	0	0 (of 2)
Medical Misadvent.	7	2.7	0	0 (of 2)	-	0	0 (of 2)
Smoke/CO Inhal.	2	0.8	0	0 (of 2)	-	0	0 (of 2)
Other	7	2.7	20	1 (of 5)	-	20	1 (of 5)
OVERALL	**256**	**-**	**36**	**68** **(of 187)**	**-**	**59**	**108** **(of 184)**

* Refers to percentage of victims (of those tested) with positive blood ethyl alcohol levels.

** Refers to percentage of victims (of those tested) with positive tests for abuse drugs.

It should be noted that a blood ethyl alcohol concentration of 0.08% is considered to be intoxicated when driving.

TABLE XII. ABUSE DRUGS PRESENT IN NON-VEHICULAR ACCIDENTS

	Drugs			
Situation	**Cocaine**	**PCP**	**Heroin**	**Amphetamines**
Asphyxia/Suffocation	0	0	1	0
Aspiration	0	1	0	0
Burns	0	0	0	0
Drowning	1	0	0	0
Drug Caused	59	0	72	21
Drug Reactions	0	0	0	0
Drug/Alc. Abuse Related	6	0	6	2
Falls	0	0	0	1
Hanging	0	0	0	0
Head Trauma	0	0	0	0
Medical Misadventure	0	0	0	0
Smoke / CO Inhalation	0	0	0	0
Other	0	0	0	1
TOTALS	**66**	**1**	**79**	**25**

NOTES: Drugs may have been present singly or in combination.
Drugs used therapeutically are not included in this tabulation.
There may be more than one drug present in a case.
Drugs were not tested for in every case.

Whether drugs are tested for or not depends upon the type of case, the length of time the person was hospitalized before death, and the contribution that drug test results will make in determining the cause and manner of death. In many cases, drug testing is *not* performed. Therefore the above figures will provide only a rough idea of the relative incidence of abuse drug usage in accidental deaths.

TABLE XIII. ACCIDENTAL DEATH SITUATIONS BY RACE

	Race								
Method	**White**		**Black**		**Asian**		**Other**		**Total**
Asphyxia/Suffocation	7	(54%)	2	(15%)	4	(31%)	0	(0%)	**13**
Aspiration	3	(75%)	0	(0%)	1	(25%)	0	(0%)	**4**
Burns	4	(57%)	2	(29%)	1	(14%)	0	(0%)	**7**
Drowning	2	(40%)	1	(20%)	2	(40%)	0	(0%)	**5**
Drug/Alc. Abuse Related	8	(67%)	3	(25%)	0	(0%)	1	(8%)	**12**
Drug/Poison Caused	107	(76%)	25	(18%)	6	(4%)	2	(1%)	**140**
Falls	40	(75%)	3	(6%)	10	(19%)	0	(2%)	**53**
Hanging	2	(100%)	0	(0%)	0	(0%)	0	(0%)	**2**
Head Trauma	4	(100%)	0	(0%)	0	(0%)	0	(0%)	**4**
Medical Misadventure	6	(86%)	0	(0%)	1	(14%)	0	(0%)	**7**
Smoke/CO Inhalation	1	(50%)	0	(0%)	1	(50%)	0	(15%)	**2**
Other	4	(57%)	2	(29%)	1	(14%)	0	(0%)	**7**
TOTALS	**188**	**(73%)**	**38**	**(15%)**	**27**	**(11%)**	**3**	**(1%)**	**256**

NOTE: Row percentages refer to percentages by race for each mode. These can be compared to total percentages for each race to see whether a mode is more or less prevalent in a racial group. For instance, deaths from falls appear to occur *more* frequently in Asians (19%) than the general involvement of Asians in accidental deaths (11%). Deaths from falls occur *less* frequently in Blacks (6%) than would be anticipated, based on the overall involvement of Blacks in accidental deaths (15%).

RACE OF NON-VEHICULAR ACCIDENT VICTIMS

FISCAL YEAR 2002-2003

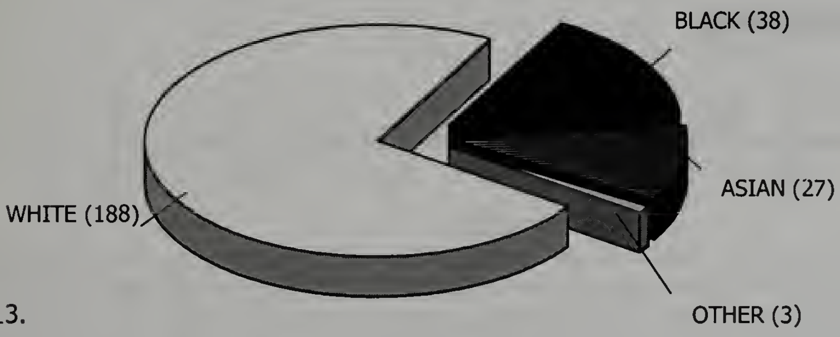

Figure 13.

AGE OF ACCIDENTAL DEATH VICTIMS

FISCAL YEAR 2002-2003

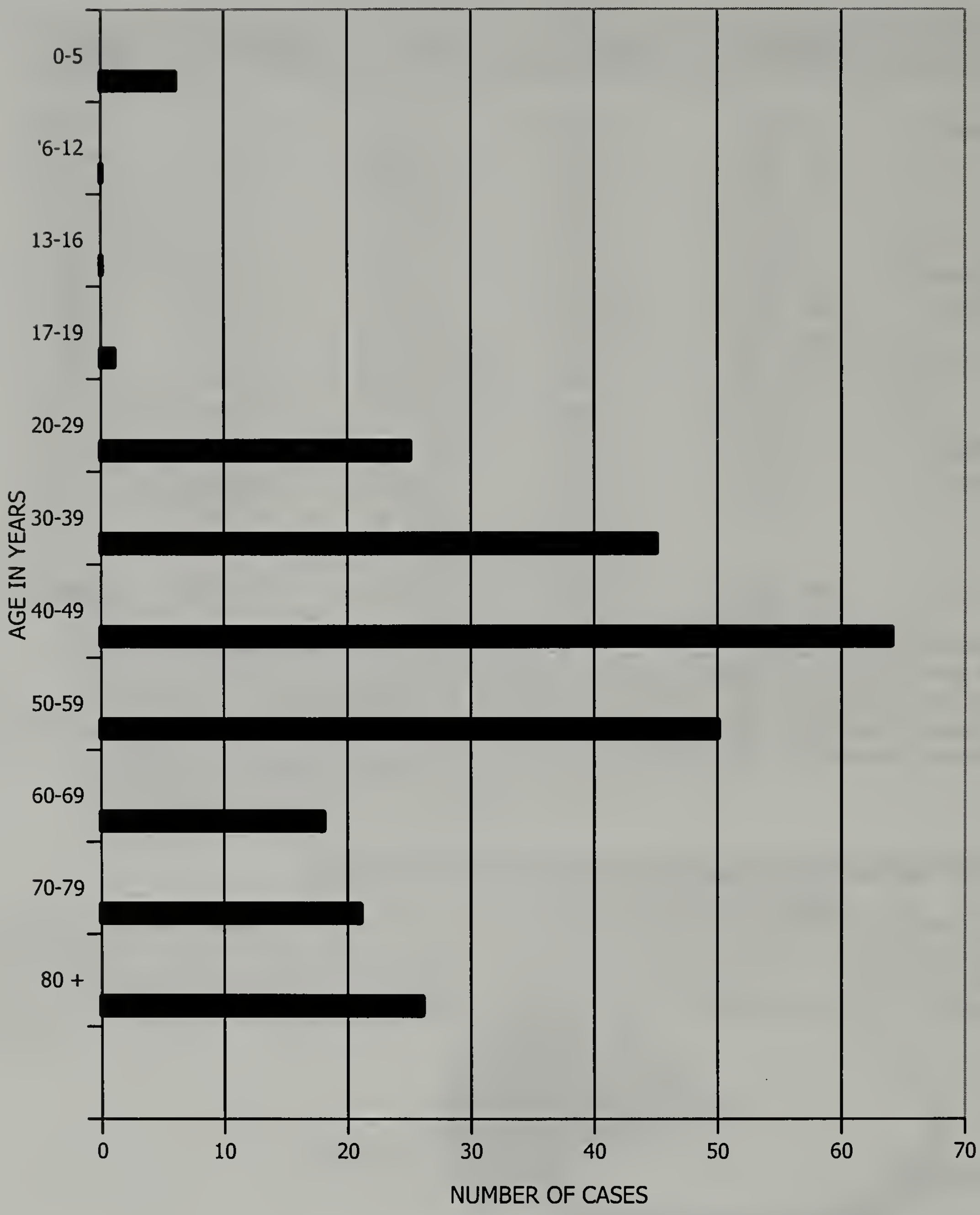

Figure 14.

TABLE XIV. ACCIDENTAL DEATH SITUATIONS BY AGE

Age Range - Years

Method	0-5	6-12	13-16	17-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Ave. Age
Asphyxia	3 (23%)	0	0	0	0	1 (8%)	2 (15%)	2 (15%)	0	3 (23%)	2 (15%)	49.2
Aspiration	0	0	0	0	0	1 (25%)	0	2 (50%)	0	1 (25%)	0	53.0
Burns	0	0	0	0	0	0	2 (29%)	2 (29%)	2 (29%)	1 (14%)	0	56.9
Drowning	0	0	0	0	0	0	0	1 (20%)	2 (40%)	1 (20%)	1 (20%)	68.6
Drug/Alc. Abuse Rel.	0	0	0	0	1 (8%)	2 (17%)	4 (33%)	5 (42%)	0	0	0	44.4
Drug/Poison Caused	0	0	0	1 (0.7%)	18 (13%)	39 (28%)	48 (34%)	25 (18%)	7 (5%)	2 (1%)	0	42.3
Falls	1 (2%)	0	0	0	1 (2%)	1 (2%)	7 (13%)	6 (11%)	5 (9%)	12 (23%)	20 (38%)	71.0
Hanging	1 (50%)	0	0	0	1 (50%)	0	0	0	0	0	0	15.5
Head Trauma	0	0	0	0	0	0	1 (25%)	2 (50%)	1 (25%)	0	0	55.2
Medical Misadvent.	1 (14%)	0	0	0	1 (14%)	0	0	3 (43%)	1 (14%)	1 (14%)	0	46.4
Smoke/CO Inhalation	0	0	0	0	0	1 (50%)	0	0	0	0	1 (50%)	59.5
Other	0	0	0	0	3 (43%)	0	0	2 (29%)	0	0	2 (29%)	51.4
TOTALS **% Of Total**	**6** **(2%)**	**0**	**0**	**1** **(0.4%)**	**25** **(10%)**	**45** **(18%)**	**64** **(25%)**	**50** **(20%)**	**18** **(7%)**	**21** **(8%)**	**26** **(10%)**	**50.3**

NOTE: Row percents refer to percentage by age range for each mode. These can be compared to total percentages for each age range to see if a mode is more or less prevalent in an age group. For example, drowning occurred *more* frequently in the 0-12 year age group (23%) than the general involvement of this age group in accidents (2%) while falls in the 30-39 year age group occurred *less* frequently (2%) than all accidents in this age group (18%). Falls in the age group 60-80+ occurred *more* frequently (70%) than all accidents in this age group (25%).

TABLE XV. ACCIDENTAL DEATH SITUATIONS BY SEX

Method	Sex Male	Female
Asphyxia	7 (54%)	6 (46%)
Aspiration	2 (50%)	2 (50%)
Burns	1 (14%)	6 (86%)
Drowning	3 (60%)	2 (40%)
Drug/Alcohol Abuse Related	10 (83%)	2 (17%)
Drug/Poison Caused	109 (78%)	31 (22%)
Falls	23 (43%)	30 (57%)
Hanging	2 (100%)	0 (0%)
Head Trauma	3 (75%)	1 (25%)
Medical Misadventure	4 (57%)	3 (43%)
Smoke/CO Inhalation	1 (50%)	1 (50%)
Other	4 (57%)	3 (43%)
TOTALS (% of Total)	**169 (66%)**	**87 (34%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths from drugs/poisons appear to occur more frequently in males (78%) than the general involvement of males in accidental deaths (66%) while deaths from burns occurred more frequently in females (86%) than all accidental deaths in females (34%).

VEHICULAR DEATHS

In 2002-2003, there were 53 vehicular fatalities in San Francisco. The number of such fatalities by type is indicated in Figure 15, page 36 and Table XVI, page 37. Percentages of all vehicular fatalities by type are shown in Table XVI, page 37. The largest number of vehicular fatalities involved pedestrians; the second largest number involved automobile drivers.

Of the vehicular fatalities tested for alcohol (i.e., those in the hospital for less than 24 hours), pedestrians had the highest average blood ethyl alcohol concentration (0.27%).

Abuse Drug Involvement (Table XVII, page 37)

Cocaine was the abuse drug seen most frequently in vehicular fatalities (4 times).

Age Distribution (Table XVIII, page 38, Table XIX, page 39, and Figure 16, page 38)

Deaths of motorcycle drivers in the 20-39 year age group occur more frequently (75%) than the general involvement of this age group in vehicular fatalities (28%).

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Distribution by Sex (Table XIX, page 39)

Overall, males were the predominant victims of vehicular fatalities (57%).

Racial Distribution (Table XIX and Figure 17, page 39)

Overall, vehicular fatalities occur most frequently in White non-Hispanics (37%). Asians were represented more heavily among deaths of pedestrians (45%) than would be expected by their involvement in all vehicular fatalities (35%).

VEHICULAR DEATHS

In San Francisco, there were 53 vehicle-related fatalities (43 accidents, 9 homicides, and 1 suicide) accounting for 3.5% of the Medical Examiner death investigations for the fiscal year 2002-2003.

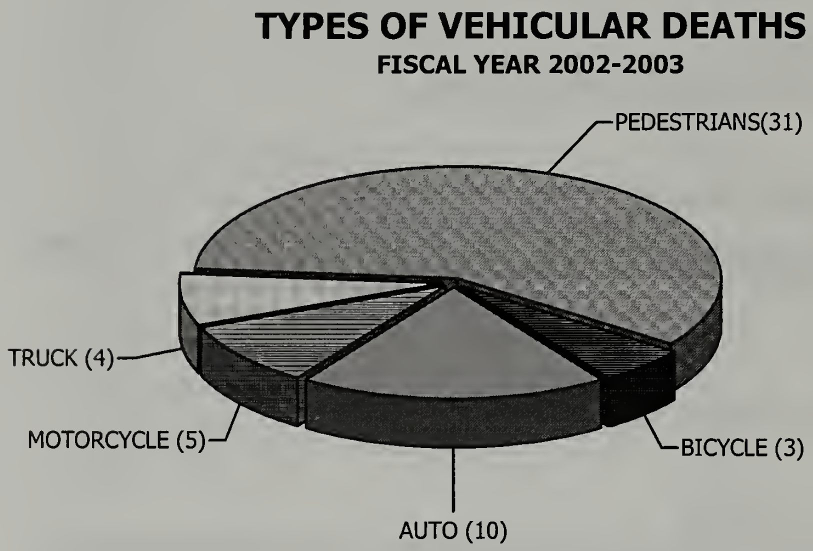


Figure 15.

TABLE XVI. VEHICULAR FATALITIES IN 2002-2003

Drug and Alcohol Involvement

Method	Number	% W/ Alc.*	# Positive (# Tested)	Ave. Alc. Conc. (g%)	% With Drugs**	# Positive (# Tested)	% W/ Drugs & Alcohol	# Positive (# Tested)
Pedestrian	31 (58%)	19%	5 (of 27)	0.27	23%	5 (of 22)	5%	1 (of 22)
Auto Driver	9 (17%)	43%	3 (of 7)	0.26	0%	0 (of 6)	0%	0 (of 6)
Auto Passenger	1 (2%)	0%	0 (of 1)	-	0%	0 (of 1)	0%	0 (of 1)
Truck Driver	2 (4%)	100%	2 (of 2)	0.20	0%	0 (of 2)	0%	0 (of 2)
Truck Passenger	2 (4%)	50%	1 (of 2)	0.10	0%	0 (of 1)	0%	0 (of 1)
Motorcycle Driver	4 (8%)	25%	1 (of 4)	0.19	33%	1 (of 3)	0%	0 (of 3)
Bicycle Driver	3 (6%)	0%	0 (of 3)	-	0%	0 (of 1)	0%	0 (of 1)
Motorcy. Passenger	1 (2%)	100%	1 (of 1)	0.09	0%	0 (of 1)	0%	0 (of 1)
TOTALS	**53**	**28%**	**13** **(of 47)**	**-**	**16%**	**6** **(of 37)**	**3%**	**1** **(of 37)**

* Refers to percentages of victims (of those tested) with positive blood ethyl alcohol levels.
** Refers to percentage of victims (of those tested) with positive blood tests for abuse drugs.

TABLE XVII. ABUSE DRUGS PRESENT IN VEHICULAR FATALITIES

	Drugs			
Situation	**Cocaine**	**PCP**	**Heroin**	**Amphetamines**
Pedestrian	3	0	2	2
Auto Driver	0	0	0	0
Auto Passenger	0	0	0	0
Truck Driver	0	0	0	0
Truck Passenger	0	0	0	0
Motorcycle Driver	1	0	0	0
Bicycle Driver	0	0	0	0
Motorcycle Passenger	0	0	0	0
TOTALS	**4**	**0**	**2**	**2**

TABLE XVIII. VEHICULAR FATALITIES BY AGE

Age Range - Years

Situation	0-5	6-12	13-16	17-19	20-29	30-39	40-49	50-59	60-69	70-79	80+
Pedestrian	1 (3%)	0	0	0	3 (10%)	2 (6%)	8 (26%)	6 (19%)	5 (16%)	3 (10%)	3 (10%)
Auto Driver	0	0	0	0	2 (22%)	1 (11%)	1 (11%)	1 (11%)	2 (22%)	1 (11%)	1 (11%)
Auto Passenger	0	0	0	0	0	0	0	0	0	1 (100%)	0
Truck Driver	0	0	0	0	0	1 (50%)	0	1 (50%)	0	0	0
Truck Passenger	0	0	0	0	0	1 (50%)	0	1 (50%)	0	0	0
Motorcycle Driver	0	0	0	0	1 (25%)	2 (50%)	1 (25%)	0	0	0	0
Bicycle Driver	0	0	0	0	0	1 (33%)	2 (67%)	0	0	0	0
Motorcycle Passenger	0	0	0	0	1 (100%)	0	0	0	0	0	0
TOTALS **% Of Totals**	**1** **(2%)**	**0**	**0**	**0**	**7** **(13%)**	**8** **(15%)**	**12** **(23%)**	**9** **(17%)**	**7** **(13%)**	**5** **(9%)**	**4** **(8%)**

NOTE: Row percents refer to percentages by age group for each situation. These can be compared to total percentages for each age group to see if a situation is more or less prevalent in an age group. For example, deaths of motorcycle drivers in the 20-29 year age group occur *more* frequently (25%) than the general involvement of this age group in vehicular fatalities (13%). Auto driver fatalities are more prevalent in the 60+ age group (44%) than the general involvement of this age group in all vehicular fatalities (30%).

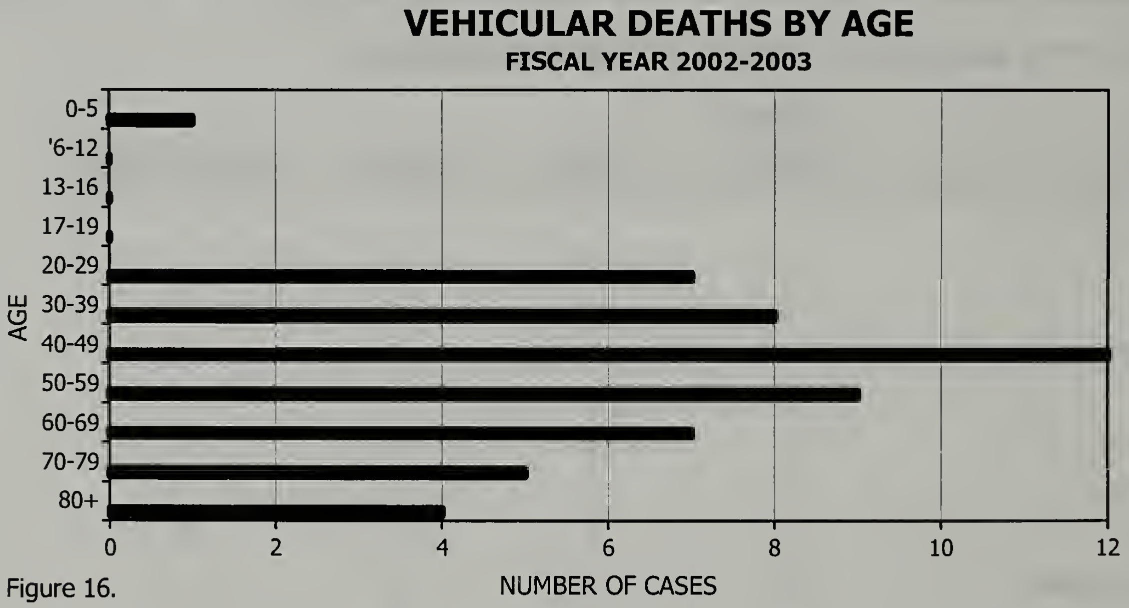
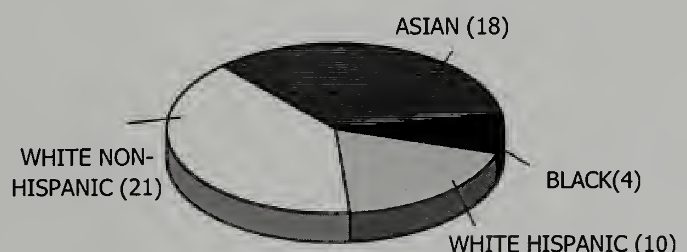


Figure 16.

TABLE XIX. DEMOGRAPHICS OF VEHICULAR FATALITIES

	Sex		Race				Age
Situation	**M**	**F**	**W-NH**	**W-H**	**B-NH**	**A**	**Average**
Pedestrian	15 (48%)	16 (52%)	13 (38%)	3 (10%)	2 (7%)	13 (45%)	54
Auto Driver	5 (56%)	4 (44%)	5 (56%)	1 (11%)	1 (11%)	2 (22%)	53
Auto Passenger	0	1 (100%)	0	0	0	1 (100%)	79
Truck Driver	2 (100%)	0	1 (50%)	1 (50%)	0	0	46
Truck Passenger	1 (50%)	1 (50%)	0	1 (50%)	0	1 (50%)	44
Motorcycle Driver	4 (100%)	0	1 (25%)	2 (50%)	0	1 (25%)	34
Bicycle Driver	3 (100%)	0	1 (33%)	1 (33%)	1 (33%)	0	42
Motorcycle Passen.	0	1 (100%)	0	1 (100%)	0	0	28
Average	**30**	**23**	**21**	**10**	**4**	**18**	**51**
Average %	**(57%)**	**(43%)**	**(40%)**	**(21%)**	**(8%)**	**(34%)**	

NOTE: Row percentages refer to percentage by demographic characteristics for each situation. These can be compared to total percentage for each characteristic to see whether a situation is more or less prevalent in any one characteristic. For example, accidental deaths of motorcycle drivers occur *more* frequently in males (100%) than the general involvement of males in vehicular fatalities (57%). Also, deaths of automobile drivers occur *more* frequently in White non-Hispanics (56%), than the general involvement of White non-Hispanics in vehicular fatalities (40%).



RACE OF VEHICULAR DEATH VICTIMS

FISCAL YEAR 2002-2003

Figure 17.

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SUICIDES

The determination of suicide as a manner of death represents the summation of scene investigation, including a review of psychological state, autopsy, pathology, toxicology and, frequently, other investigation. To the best of our knowledge, ours is the only Medical Examiner's Office routinely performing toxicology testing on multiple organs and/or body fluids in order to evaluate the metabolic status of a drug or drugs.

Realizing the immense emotional impact on family, the diagnosis of suicide is never made lightly, and always represents a decision made on the basis of data sufficient to defend that decision in a court of law, if necessary. Should these data be inconclusive, the victim automatically gets the benefit of the doubt.

Suicide takes a tremendous toll on our young people. The relative number jumping from the Golden Gate Bridge would not seem to warrant the publicity assigned them as compared to the evident need for help for individuals using other methods.

To help understand the problem, and hopefully, to aid in reduction of suicides, this office has supported suicide prevention and research programs for many years. It is hoped that this work will help to reduce this needless loss.

The majority of these deaths are situational reactions and, if given momentary trained support, are potentially preventable.

SUICIDAL DEATHS

One hundred and fourteen (114) deaths were ruled to have been due to non-vehicular suicide during the 2002-2003 fiscal year and are the basis for the tabulations in this Section. The number of individuals dying by each method of suicide are presented in Figure 18, page 43, and Table XX, page 44, and the percentages of all suicidal deaths by type are indicated in Table XX, page 44, along with alcohol and drug involvement for each mode.

Abuse Drug Involvement (Table XXI, page 44)

Abuse drugs were present 26 times in suicidal deaths in 2002-2003. The abuse drugs seen most frequently in suicidal deaths were cocaine (9 times) and amphetamines (9 times). Abuse drugs were associated more frequently with deaths caused by drug overdose than with any other means of suicide.

Racial Distribution (Table XXII and Figure 19, page 45)

Deaths from suicide occurred most frequently in Whites (80% of total suicides). The White racial group has been divided into Hispanic and non-Hispanic in this tabulation. It can be seen that the White non-Hispanic group was involved in 76% of all suicides but in 89% of all suicides by drug overdose.

Age Distribution (Table XXIII, page 46, Table XXIV, page 47 and Figure 20, page 47)

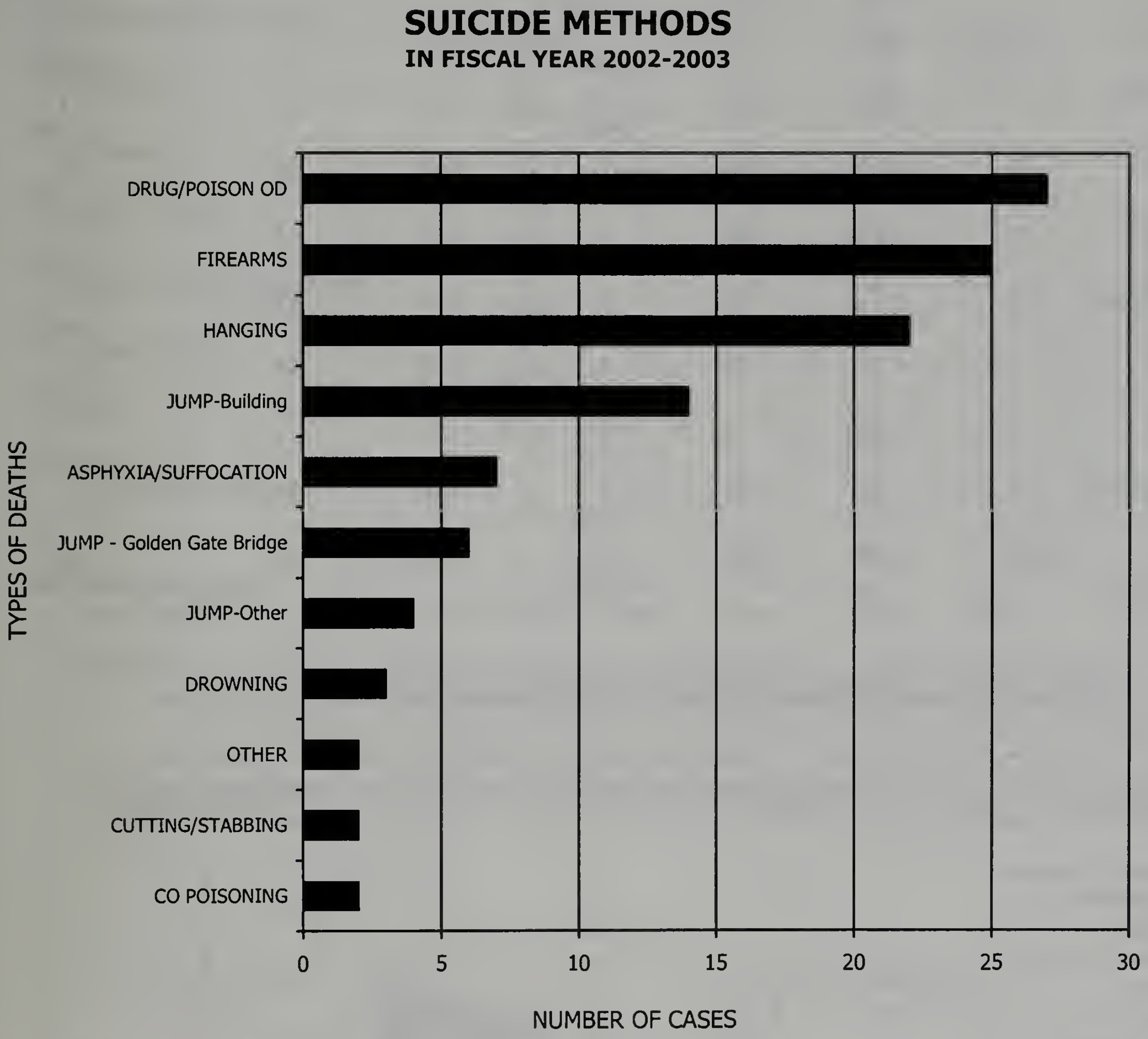
There were no deaths by suicide in the 13-16 year or 17-19 year age groups during this fiscal year. The 40-49 year age group had the highest number of suicides of any age group with deaths from drug overdoses, firearms and hanging constituting more than two-thirds of the total.

Distribution by Sex (Table XXV, page 48)

Males were more likely than females to commit suicide in 2002-2003 (80% male, 20% female).

SUICIDES

Suicides are self-inflicted deaths. In San Francisco, the 114 suicides which are being tabulated account for 7.6% of the Medical Examiner death investigations for the fiscal year of 2002-2003.


SUICIDE METHODS

IN FISCAL YEAR 2002-2003

Figure 18.

TABLE XX. SUICIDAL DEATHS BY MODE

Abuse Drug and Alcohol Involvement

Method	Number	% Of Total Suicides	% With Alcohol	# Positive (# Tested)	Ave. Alc. Conc. (g%)	% W/ Abuse Drugs	# Positive (# Tested)
Asphyxia/Suffocation	7	6.1	86	6 (of 7)	0.14	0	0 (of 7)
Drowning	3	2.6	67	2 (of 3)	0.16	33	1 (of 3)
Cutting/Stabbing	2	1.8	0	0 (of 1)	-	0	0 (of 1)
Drug/Poison OD	27	23.7	26	7 (of 27)	0.19	30	8 (of 27)
Firearms	25	21.9	43	10 (of 23)	0.15	4	1 (of 23)
Hanging	22	19.3	16	3 (of 19)	0.16	26	5 (of 19)
Jump - Building	14	12.3	25	3 (of 12)	0.17	9	1 (of 11)
Jump - G. G. Bridge	6	5.3	33	2 (of 6)	0.24	17	1 (of 6)
Jump - Other	4	3.5	25	1 (of 4)	0.10	25	1 (of 4)
Other	2	1.8	0	0 (of 2)	-	0	0 (of 2)
Smoke/CO Poisoning	2	1.8	50	1 (of 2)	0.16	50	1 (of 2)
TOTALS	**114**	**100**	**33**	**35** **(of 106)**	**0.16**	**18**	**19** **(of 105)**

TABLE XXI. ABUSE DRUGS PRESENT IN SUICIDAL DEATHS

	Drugs			
Situation	Cocaine	PCP	Heroin	Amphetamines
Asphyxia/Suffocation	0	0	0	0
Cutting/Stabbing	0	0	0	0
Drowning	1	0	0	0
Drug/Poison Overdose	1	0	3	4
Firearms	0	0	1	1
Hanging	3	0	3	1
Jump - Building	1	0	0	1
Jump - Golden Gate Bridge	1	0	0	0
Jump - Other	0	0	0	1
Smoke/CO Poisoning	1	0	0	1
Other	1	0	1	0
TOTALS	**9**	**0**	**8**	**9**

TABLE XXII. SUICIDE METHODS BY RACE

	Race					
Method	**W-NH**	**W-H**	**B-NH**	**ASIAN**	**OTHER**	**TOTALS**
Asphyxia/Suffocation	7 (100%)	0	0	0	0	**7**
Cutting/Stabbing	1 (50%)	1 (50%)	0	0	0	**2**
Drowning	1 (33%)	0	1 (33%)	1 (33%)	0	**3**
Drug/Poison Overdose	24 (89%)	0	0	2 (7%)	1 (4%)	**27**
Firearms	20 (80%)	2 (8%)	2 (8%)	1 (4%)	0	**25**
Hanging	11 (50%)	2 (9%)	2 (9%)	7 (32%)	0	**22**
Jump - Building	10 (71%)	0	1 (7%)	3 (21%)	0	**14**
Jump - Golden Gate Bridge	6 (100%)	0	0	0	0	**6**
Jump - Other	4 (100%)	0	0	0	0	**4**
Other	1 (33%)	0	0	1 (4%)	0	**2**
Smoke/CO Poisoning	2 (100%)	0	0	0	0	**2**
TOTAL NUMBER **% OF TOTALS**	**87** **(76%)**	**5** **(5%)**	**6** **(5%)**	**15** **(13%)**	**1** **(1%)**	**114**

NOTE: Row percentages refer to percentages by race for each method. These can be compared to total percentages for each race to see whether a method is more or less prevalent in a racial group. For instance, suicides by hanging appear to occur *more* frequently in Asians (32%) than the general involvement of Asians in suicides (13%), and deaths by drowning in White non-Hispanics (33%) occur *less* frequently than all suicides in White non-Hispanics (76%).

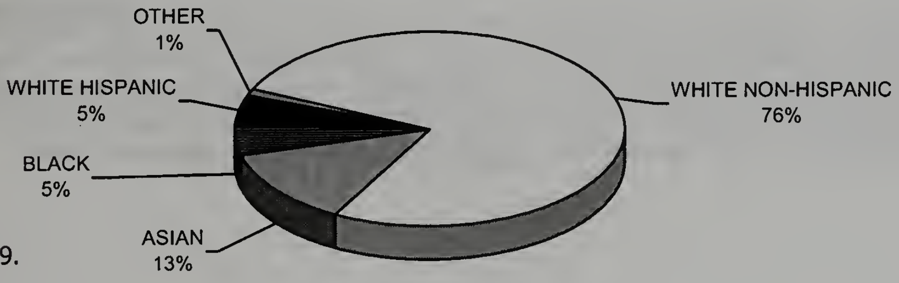


Figure 19.

TABLE XXIII. SUICIDE METHODS BY AGE

Age Range - Years

Method	**13-16**	**17-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80-89**	**90 +**
Asphyxia/Suffocation	0	0	0	1 (14%)	2 (29%)	3 (43%)	0	1 (14%)	0	0
Cutting/Stabbing	0	0	1 (50%)	1 (50%)	0	0	0	0	0	0
Drowning	0	0	0	0	1 (33%)	0	0	2 (67%)	0	0
Drug/Poison Overdose	0	0	4 (15%)	6 (22%)	6 (22%)	6 (22%)	2 (7%)	2 (7%)	1 (4%)	0
Firearms	0	0	2 (8%)	2 (8%)	7 (28%)	7 (28%)	1 (4%)	2 (8%)	3 (12%)	1 (4%)
Hanging	0	0	6 (27%)	4 (18%)	7 (28%)	1 (4%)	2 (9%)	2 (9%)	0	0
Jump - Building	0	0	4 (29%)	2 (14%)	3 (21%)	2 (14%)	1 (7%)	2 (14%)	0	0
Jump - G. G. Bridge	0	0	0	4 (67%)	2 (33%)	0	0	0	0	0
Jump - Other	0	0	1 (25%)	1 (25%)	1 (25%)	0	1 (25%)	0	0	0
Other	0	0	0	0	0	1 (50%)	0	0	1 (50%)	0
Smoke/CO Poisoning	0	0	0	2 (100%)	0	0	0	0	0	0
TOTAL NUMBER	**0**	**0**	**18**	**23**	**29**	**20**	**7**	**11**	**5**	**1**
% OF TOTAL	**(0%)**	**(0%)**	**(16%)**	**(20%)**	**(25%)**	**(18%)**	**(6%)**	**(10%)**	**(4%)**	**(1%)**

NOTE: Row percents refer to percentage by age range for each method. These can be compared to total percentages for each age range to see if a method is more or less prevalent in an age group. For example, death by jumps from buildings appears to occur *more* frequently in the 20-29 years of age group (29%) than the general involvement of this age group in suicides (16%), and deaths by asphyxiation in the 50-59 year age group (43%) occur *more* frequently than suicides by all means in this age group (18%).

SUICIDES

TABLE XXIV. AGE RANGES - COMPARISON BY YEAR*

Age Range Years	93-'94	94-'95	95-'96	96-'97	97-'98	98-'99	99-'00	'00-'01	'01-'02	'02-'03
0 - 19	5	3	5	6	3	2	0	n/a	n/a	0
20 - 29	30	18	21	22	14	18	19	n/a	n/a	18
30 - 39	31	29	27	28	22	19	12	n/a	n/a	23
40 - 49	20	27	39	35	24	25	23	n/a	n/a	29
50 - 59	23	18	29	11	12	6	17	n/a	n/a	20
60 - 69	12	11	13	7	15	4	13	n/a	n/a	7
70 - 79	7	9	14	16	8	7	5	n/a	n/a	11
80 - 89	7	7	7	9	7	8	10	n/a	n/a	5
90 - 99	1	2	1	5	6	1	2	n/a	n/a	1
Unknown	0	0	0	0	0	0	0	n/a	n/a	0
TOTALS	**136**	**124**	**156**	**139**	**111**	**90**	**101**	**111**	**95**	**114**

* Except for fiscal year 2001-2002, totals do not include vehicular deaths ruled to be suicide.
n/a = information not available

SUICIDE VICTIMS BY AGE

FISCAL YEAR 2002-2003

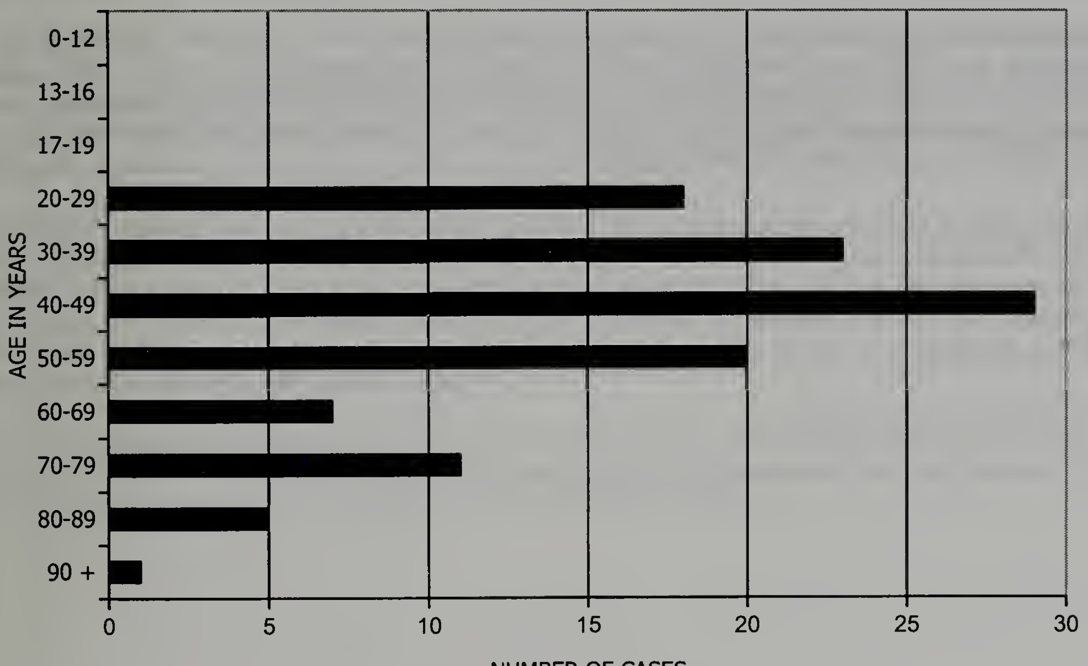


Figure 20.

TABLE XXV. SUICIDE METHODS BY SEX

Method	**Sex** **Male**		**Female**	
Asphyxia/Suffocation	7	(100%)	0	
Cutting/Stabbing	2	(100%)	0	
Drowning	2	(67%)	1	(33%)
Drug/Poison Overdose	16	(59%)	11	(41%)
Firearms	24	(96%)	1	(4%)
Hanging	19	(86%)	3	(14%)
Jump - Building	9	(64%)	5	(36%)
Jump - Golden Gate Bridge	6	(100%)	0	
Jump - Other	3	(75%)	1	(25%)
Other	1	(50%)	1	(50%)
Smoke/CO Poisoning	2	(100%)	0	
TOTALS	**91**	**(80%)**	**23**	**(20%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths by firearms appear to occur *more* frequently in males (96%) than the general involvement of males in suicides (80%), while females die by jumping from buildings *more* frequently (36%) than all suicides in females (20%).

HOMICIDE

Homicide is the killing of one human being by another. Murder is the unlawful killing of a human being with malice. The following data do not differentiate homicide as to whether it was justifiable, accidental, or murder. Such distinctions are the proper function of the judicial system and are not the responsibility or function of this office.

Any judicial system which deals with crimes involving death requires a well-trained staff and well-equipped Medical Examiner's Office which can and will interpret forensic findings in an unbiased, fair manner. Their investigation must be intense, accurate and rapid enough so that charges may be pursued or dismissed without unfairly affecting an individual's constitutional rights. That is the purpose of this office.

The proper evaluation and investigation of a homicide begins, naturally, at the scene. In the majority of cases, a staff member of this office (either the Investigator, Medical Examiner's Administrator, or Medical Examiner), determines whether a death is potentially a homicide. It has been well-documented that if such a determination is made by an individual inexperienced or untrained in death investigation, his opinion will be wrong in 50% of the cases. Such a person is very apt to miss the subtle homicide and is more inclined to miscall a natural or accidental death a homicide, resulting in false arrest, false accusations, needless expenditure of public funds, waste of investigative time, and delay in the investigation of other deaths.

The Investigator responds to the scene of death and determines whether the Police Homicide Detail will be called. When homicide is obvious, the Investigator responds as part of a team (other members include homicide investigators, photographers and criminologists). This office is responsible for the body, identification, inquiry into circumstances, manner and means of death (Gov. Code 27491.2). In addition to the scene investigation, the Investigator is responsible for recovering property, locating and notifying next of kin, and preparing a written summary of his/her investigation.

In about one-third to one-half of all homicides, a forensic pathologist will respond to the scene to aid in the investigation. The subsequent autopsy may also use photography, fluoroscopy, X-ray, angiography and other techniques to establish and define the number, nature and severity of wounds, to obtain evidence (i.e., bullets) and to prepare an official report. This report, including chemistry, serology and toxicology results, is used as part of the prosecution or defense of the case in the formal judicial hearing.

Pertaining to criminal trial, our judicial system requires identification of an individual and presentation of evidence, usually by virtue of expert testimony, relative to the cause of death or trauma associated with death. The Medical Examiner's Office identifies the body, frequently relying on local police, CII, or FBI fingerprints. Expert forensic testimony is provided by the Forensic Pathologist from this office. In addition, the Forensic Toxicologist is frequently called upon to testify on the significance and effect of various drug levels, a matter of great importance when dealing with the concept of diminished capacity.

Of minor, but increasing importance, is the fact we are seeing more homicide and trauma cases transferred into the County for medical therapy because of San Francisco's excellent and advanced medical facilities. If these individuals should die, the autopsy and court testimony are provided by this office.

HOMICIDE DEATHS

Eighty-nine (89) deaths were ruled to have been due to homicide during the 2002-2003 fiscal year. Of these, 9 were vehicular homicides and have been discussed in the "Vehicular Deaths" section. The remaining 80 homicide deaths are the basis for the tabulations in this section. The numbers of individuals dying by each manner of death are indicated in Figure 21, page 51 and Table XXVI, page 52; percentages of all homicides represented by specific methods are indicated in Table XXVI, page 52. Of the homicide victims tested for alcohol and drugs (those in the hospital for less than 24 hours), 40% had positive blood alcohol levels and more than 41% had drugs present. The percent of homicide victims with positive blood tests for drugs varied with the method of homicide with 67% of those dying from multiple traumatic injuries having drugs present.

Abuse Drug Involvement (Table XXVII, page 52)

Cocaine was the abuse drug seen most frequently in homicide victims, being present in 23 homicide cases. Cocaine was associated most strongly with deaths by gunshot wound, with 16 of the 23 cases with cocaine present (70%) being deaths due to gunshot wounds. Stabbing was the homicide method which was associated with drugs next most frequently.

Racial Distribution (Table XXVIII and Figure 22, page 53)

Deaths by homicide occurred more frequently in Whites (50%) than in Blacks (41%). Deaths resulting from firearms accounted for 70% of all homicides in White Hispanics, 85% of homicides in Blacks and 35% of homicides in White non-Hispanics.

Age Distribution (Figure 23, page 54, Tables XXIX and XXX, page 55 and Table XXXII, page 56)

There were 11 homicides in the 0-19 year age group. Death by firearms accounted for 79% of the homicides in the 0-39 year age group in 2002-2003. The peak occurrence of deaths due to firearms was in the 20-29 year age group. As can be seen from Table XXXII, the mean age of homicide victims varies with the mode, with the lowest mean age for males being in deaths by firearms.

Distribution by Sex (Table XXXI, page 56)

Males were 7 times as likely as females to be homicide victims.

NON-VEHICULAR HOMICIDES

Homicides are those deaths caused by another person, generally resulting in murder and manslaughter charges. In San Francisco, 80 non-vehicular homicides occurred in 2002-2003, accounting for 5.3% of the total Medical Examiner investigations.

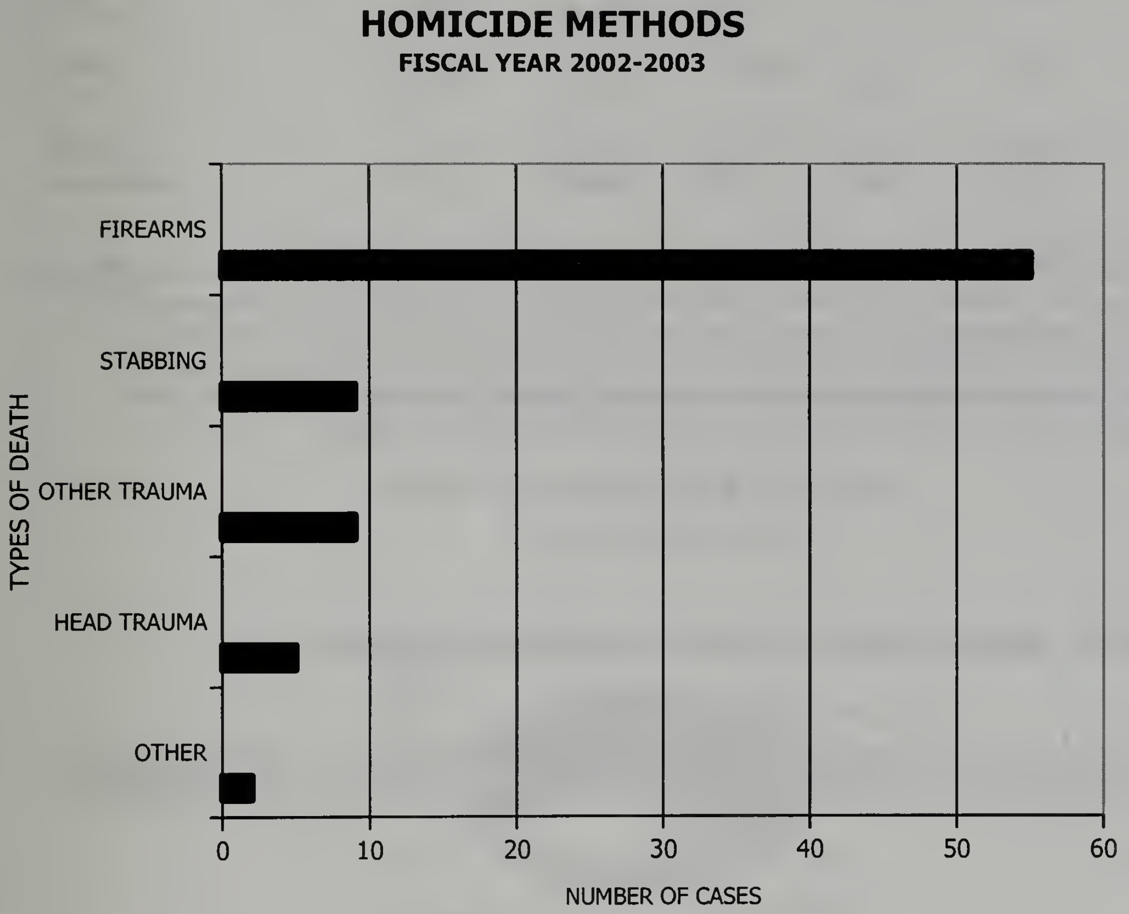


Figure 21.

TABLE XXVI. HOMICIDE DEATHS BY MODE

Abuse Drug and Alcohol Involvement

Method	Number	% Of Total Homicides	% With Alcohol *	# Positive (# Tested)	Ave. Alcohol Conc. (g%)	% With Drugs **	# Positive (# Tested)
Firearms	55	69	36	18 (of 5)	0.06	38	19 (of 50)
Stabbing	9	11	25	2 (of 8)	0.06	62	5 (of 8)
Other Trauma	9	11	71	5 (of 7)	0.20	67	4 (of 6)
Head Trauma	5	6	100	3 (of 3)	0.36	0	0 (of 3)
Other	2	3	0	0 (of 2)	-	0	0 (of 2)
TOTALS	**80**	**100**	**40**	**28** **(of 70)**	**0.12**	**41**	**28** **(of 69)**

* Refers to percentage of victims (of those tested) with positive blood ethyl alcohol concentrations.
** Refers to percentage of victims (of those tested) with positive blood tests for abuse drugs.

TABLE XXVII. DRUGS PRESENT IN NON-VEHICULAR HOMICIDE DEATHS

Drugs

Situation	Cocaine	PCP	Heroin	Amphetamines
Gunshot Wound	16	1	2	3
Head Injury	0	0	0	0
Stabbing	4	0	2	3
Traumatic Injuries	3	0	2	1
Other	0	0	0	0
TOTALS	**23**	**1**	**6**	**7**

TABLE XXVIII. HOMICIDE METHODS BY RACE

	Race					
Method	**W-NH**	**W-H**	**B-NH**	**Asian**	**Other**	**TOTAL**
Firearms	6 (11%)	16 (29%)	28 (51%)	4 (7%)	1 (2%)	**55**
Head Trauma	3 (60%)	2 (40%)	0	0	0	**5**
Other Trauma	2 (22%)	4 (44%)	2 (22%)	1 (11%)	0	**9**
Stabbing	5 (56%)	1 (11%)	3 (53%)	0	0	**9**
Other	1 (50%)	0	0	1 (50%)	0	**2**
TOTALS **% OF TOTAL**	**17** **(21%)**	**23** **(29%)**	**33** **(41%)**	**6** **(8%)**	**1** **(1%)**	**80**

NOTE: Row percentages refer to percentages by race for each method. These can be compared to total percentages for each race to see whether a method is more or less prevalent in a racial group. For instance, death by stabbing appears to occur *less* frequently in White Hispanics (11%) than the general involvement of White Hispanics in homicides (29%) while deaths due to firearms appear to occur *more* frequently in Blacks (51%) than all homicides in Blacks (41%).

RACE OF HOMICIDE VICTIMS

FISCAL YEAR 2002-2003

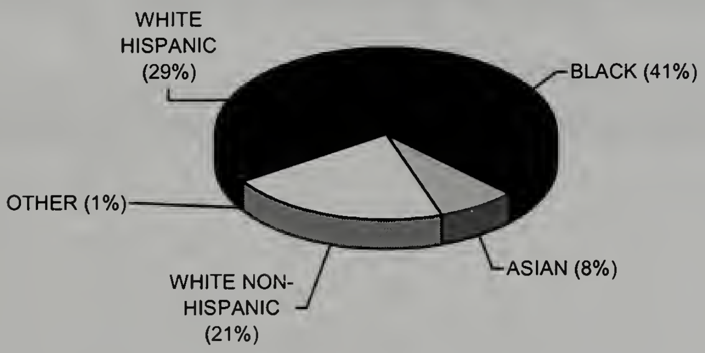


Figure 22.

HOMICIDE VICTIMS BY AGE

FISCAL YEAR 2002-2003

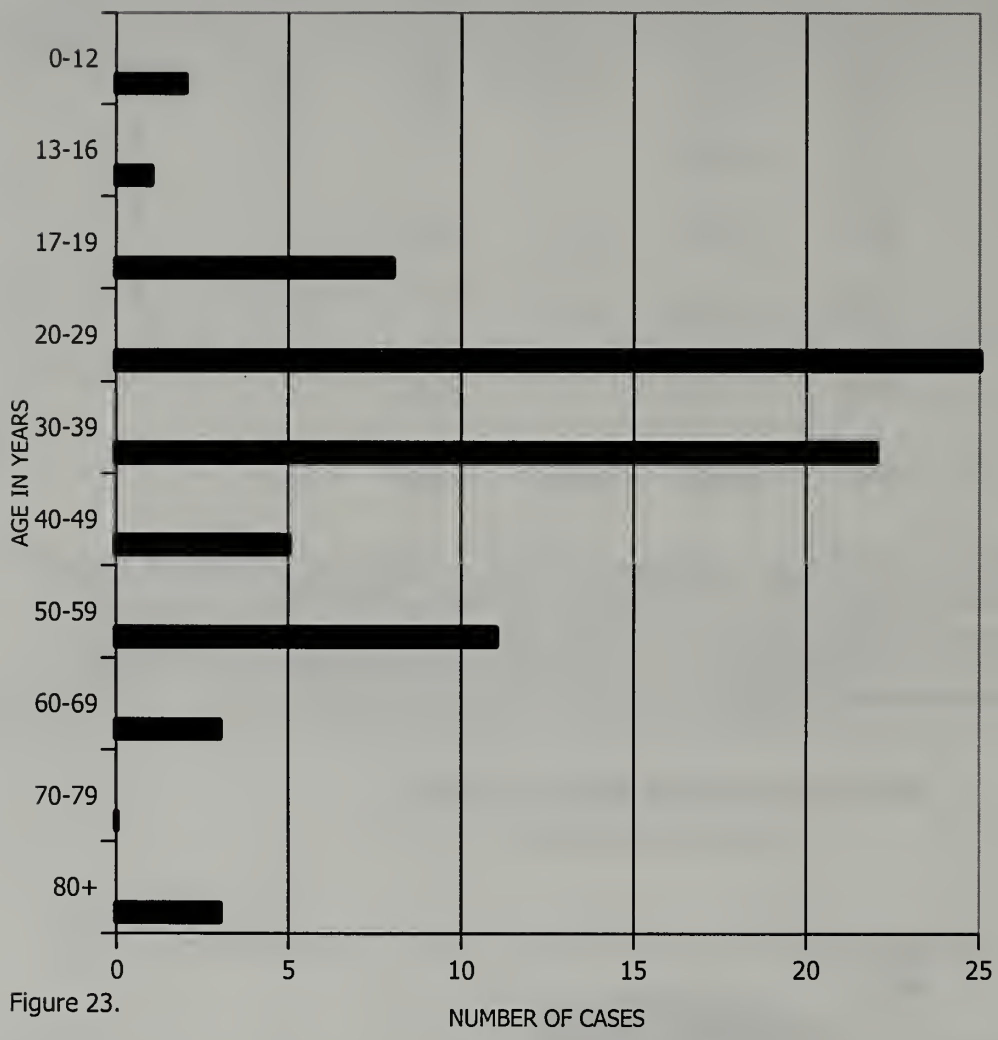


Figure 23.

TABLE XXIX. HOMICIDE METHODS BY AGE

Age Range - Years

Method	0-12	13-16	17-19	20-29	30-39	40-49	50-59	60-69	70-79	80+
Firearms	1 (2%)	1 (2%)	8 (15%)	23 (42%)	13 (24%)	1 (2%)	6 (11%)	2 (4%)	0	0
Head Trauma	0	0	0	0	2 (40%)	1 (20%)	2 (40%)	0	0	0
Other Trauma	1 (11%)	0	0	0	4 (44%)	2 (22%)	0	1 (11%)	0	1 (11%)
Stabbing	0	0	0	2 (22%)	3 (33%)	1 (11%)	3 (33%)	0	0	0
Other	0	0	0	0	0	0	0	0	0	2 100%
TOTALS	**2**	**1**	**8**	**25**	**22**	**5**	**11**	**3**	**0**	**3**
% OF TOTALS	**(2%)**	**(1%)**	**(10%)**	**(31%)**	**(28%)**	**(6%)**	**(14%)**	**(4%)**	**(0%)**	**(4%)**

NOTE: Row percents refer to percentage by age range for each method. These can be compared to total percentages for each age range to see if a method is more or less prevalent in an age group. For example, deaths by stabbing occur *more* frequently in the 50-59 year age group (33%) than the general involvement of this age group in homicides (14%) while deaths by stabbing occur *less* frequently in the 17-19 year age group (0%) than all homicides in this age group (10%).

TABLE XXX. HOMICIDE VICTIMS AGE RANGES COMPARISON BY YEAR

Fiscal Year

Age Range Years	'93-'94	'94-'95	'95-'96	'96-'97	'97-'98	'98-'99	'99-'00	'00-'01	'01-'02	'02-'03
0-19	11	18	8	5	8	5	9	n/a	n/a	11
20-29	53	34	32	22	29	16	21	n/a	n/a	25
30-39	26	23	32	18	15	11	13	n/a	n/a	22
40-49	12	12	11	9	12	14	10	n/a	n/a	5
50-59	8	4	6	5	6	7	2	n/a	n/a	11
60-69	4	2	4	2	3	1	3	n/a	n/a	3
70+	4	0	5	2	2	5	2	n/a	n/a	0

n/a = information not available

TABLE XXXI. HOMICIDE METHODS BY SEX

Method	Sex Male		Female	
Firearms	52	(95%)	3	(5%)
Head Trauma	2	(40%)	3	(60%)
Other Trauma	7	(78%)	2	(22%)
Stabbing	7	(78%)	2	(22%)
Other	2	(100%)	0	
TOTALS	**70**	**(88%)**	**10**	**(12%)**

NOTE: Row percents refer to percentages by sex for each mode. These can be compared to total percentages for each sex to see whether a mode is more or less prevalent in one sex. For example, deaths by head trauma occur *more* frequently in females (60%) than the general involvement of females in homicides (12%), while deaths by firearms in males (95%) occur *more* frequently than all homicides in males (88%).

TABLE XXXII. MEAN AGE FOR HOMICIDE VICTIMS BY METHOD AND SEX

(Age in Years)

Method	Male	Female
Firearms	29	46
Head Trauma	54	40
Other Trauma	39	59
Stabbing	40	49
Other	86	-

The lowest mean age for **males** was seen in deaths by firearms.
The lowest mean age for **females** was seen in deaths by head trauma.

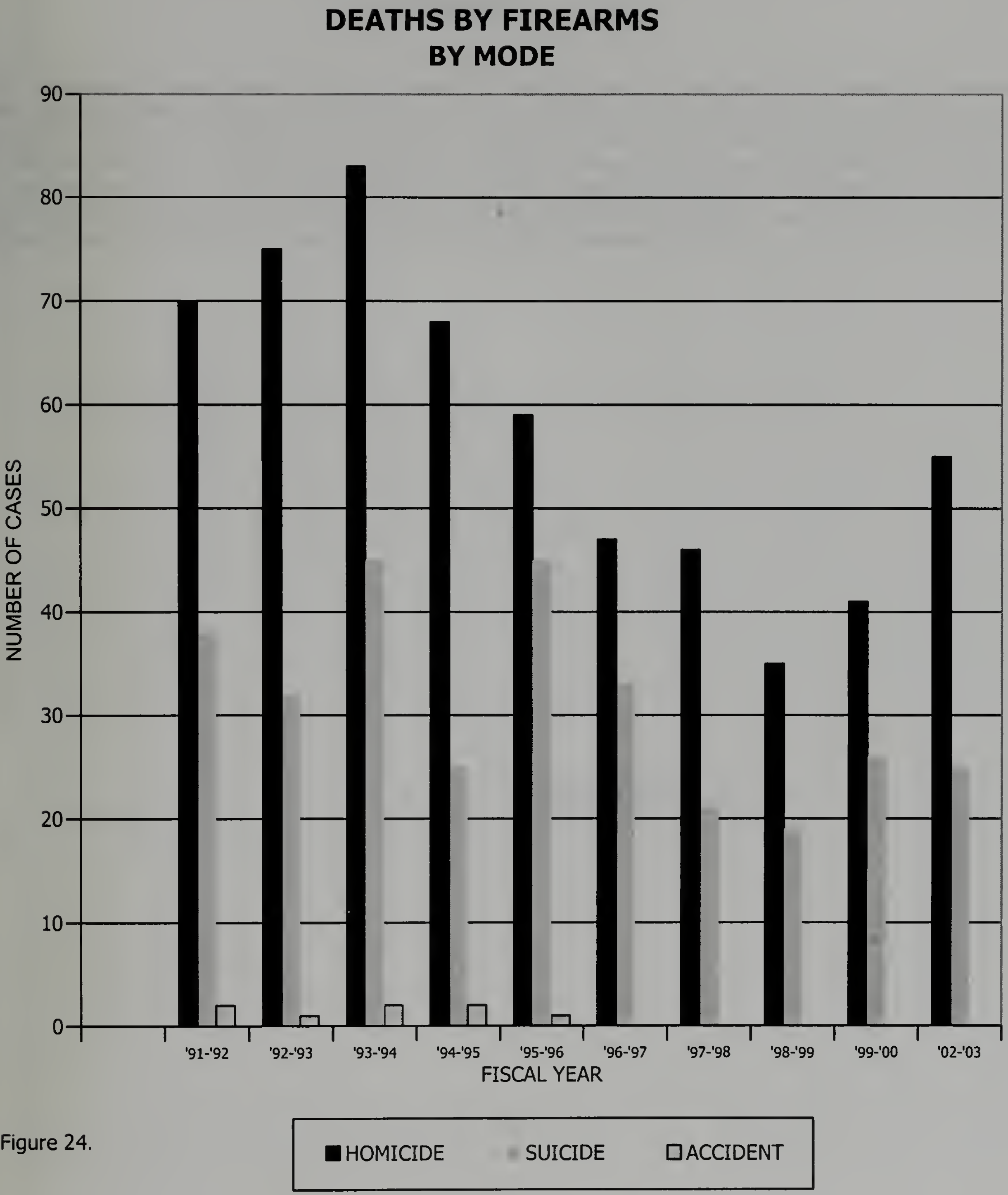

DEATHS BY FIREARMS
BY MODE
NUMBER OF CASES
90
80
70
60
50
40
30
20
10
0
'91-'92
'92-'93
'93-'94
'94-'95
'95-'96
'96-'97
'97-'98
'98-'99
'99-'00
'02-'03
FISCAL YEAR
■ HOMICIDE
▨ SUICIDE
☐ ACCIDENT

Figure 24.

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PATHOLOGY

In the **Pathology Department**, tissue and body fluid samples taken at autopsy are prepared for microscopic study, histochemically stained, or analyzed for chemical constituents. Cardiac pacemakers or other mechanical life-support devices are examined for any defect. Smears or "wet-mounts" are examined for spermatozoa, bacteria, or tuberculosis. Bacteriologic cultures may be taken. However, if pathogens are grown, they are usually sent to the Department of Public Health (State or local) for further identification. If indicated, "soft" X-rays or histochemical tests are done to establish entrance or exit gunshot wounds. New research techniques, such as methods of obtaining fingerprints from the skin of a victim, are developed here also.

MONTHLY FIGURES

Fiscal Year 2002-2003

PATHOLOGY*

Year	Total Med. Exam Cases	Cases Referred to Pathologist	No. of Organs Submitted	No. of Sections Taken	Histo-Pathologic Slides Made	Special Stains **	Serology ***	Other Determi-nations ****	Blood Drawing *****
2002									
July	127	74	375	923	496	80	80	371	15
Aug.	148	61	319	755	398	30	59	132	27
Sept.	111	50	232	595	343	66	45	113	10
Oct.	125	68	364	693	428	47	98	183	6
Nov.	106	51	155	424	204	38	35	180	12
Dec.	134	59	283	589	310	87	38	177	13
2003									
Jan.	153	65	300	392	260	76	14	18	17
Feb.	106	44	158	222	183	46	84	103	13
Mar.	124	65	209	474	265	34	73	174	13
April	137	56	199	338	257	22	21	131	9
May	127	57	233	486	308	39	-	161	12
June	118	65	233	318	307	25	-	141	22
TOTALS	**1,516**	**711**	**3,060**	**9,599**	**3,759**	**590**	**547**	**1,884**	**169**

* These figures do not reflect photography, forensic radiology, or material prepared for teaching forensic pathology

** Includes smears examined for bacteria and spermatozoa

*** ABO and Anti-Rh typing, Reverse grouping, Anti Lewis a, and Anti Lewis b typing – discontinued after April 2003

**** Blood, Urine, Water, evidence for: Hematology, Biochemistry, Urinalysis, Bacteriology, "Sickledex", Specimen storage/retrieval, Evidence storage and release

***** Includes all Blood drawing, Saliva sampling, Fingerprinting, and Urine sampling

TOXICOLOGY

Toxicology is the study of the interaction of foreign compounds, such as drugs, with living organisms (e.g. people). It involves knowing something of the nature of that interaction, how the foreign compounds break down (that is, how they are metabolized), and what effects they have on the health and behavior of the organism.

All of this information is vital to the role that toxicology plays in determining the cause of death, as well as in evaluating the significance of chemicals found in the living.

Generated within the Toxicology Department is information on samples from Medical Examiner's cases as well as from suspects in criminal cases (e.g. homicides, driving under the influence, probation failure, (H & S 11550), assaults) and other persons to be tested at the request of various law enforcement agencies. The data obtained in these cases enable the toxicologist to assist in interpreting the behavior of the suspects involved, to advise the District Attorney, the Public Defender, the City Attorney, Police Department, the California Highway Patrol, and other agencies, and to give expert testimony in court as necessary in such cases as to the effect of drugs in the case. This application of toxicological facts to legal problems is Forensic Toxicology.

The Toxicology Department also performs analyses on samples submitted by the Police and Fire Departments in connection with the recruitment programs and other personnel requirements. The results in some cases are presented to the respective commission in official hearings.

Toxicological facts are determined through tests performed on biological samples (e.g. blood, urine, gastric contents, liver, etc.) taken at the time of autopsy or from living persons. The samples are subjected to a series of chemical manipulations designed to extract any drugs or other physiologically active compounds that may be present. The subsequent extracts are then examined by equipment set up to detect, accurately identify, and quantitate any materials that may be present. These determinations must be of unquestionable accuracy and as specific as scientifically possible, and they must be able to stand up to review by any other qualified laboratory in the nation.

The analytical methods most commonly used in the toxicological studies are gas and thin layer chromatography; ultraviolet, visible, and fluorescence spectrophotometry; and immunoassay techniques. Advanced techniques, such as mass spectrometry and HPLC (High Performance Liquid Chromatography) are used as necessary for confirmation of difficult samples. These precise and sophisticated methods require the use of advanced laboratory apparatus and highly trained personnel.

Levels of drugs in two or more body compartments (one of which is invariably blood) are routinely determined in order to answer the question of whether the drug use is acute or chronic. This approach is of the utmost importance in determining the time of ingestion and whether or not the intent of the ingestion was suicide.

The range of drugs available to the public is extremely wide, and the nature and type of compounds involved are highly variable. The methodologies necessary to conduct toxicological analyses have to be similarly wide-ranging and also continually expanded in order to keep up with the manufacture of new drugs, both legal and illegal. This is an important aspect of the Toxicology Department's work, often requiring extensive research. So, too, does the identification of "street-manufactured" compounds which are sometimes found in postmortem samples. Also, with many drugs being compounded to have physiologic effects at very low doses, detection in body fluids is often extremely difficult.

The most common drugs in the community are alcohol and prescription items. However, illegal, or "street", drugs (especially morphine-type alkaloids [e.g. heroin], cocaine, and amphetamines) represent a very significant percentage of the compounds actually found in the cases presented to the Toxicology Department. Less commonly used drugs, industrial materials, certain gases, and various other foreign compounds have also been detected.

TOXICOLOGY - MEDICAL EXAMINER'S CASES
July 2002 - June 2003

Incidence of drugs and other physiologically active material detected

The compounds listed are not necessarily the cause of death nor even a contributing factor. They are the toxic agents that were **found to be present**, either singly *or* in combination, in Medical Examiner's cases.

ABUSE DRUGS	
Cocaine	133
Benzoylecgonine*	139
Morphine-type alkaloids	150
Codeine	101
Methamphetamine	63
Amphetamine	55
Phencyclidine (PCP)	3
MDMA (Ecstasy)	8
MDA	7
11-nor-delta-9-THC	4
GHB	1

ANALGESIC - NARCOTIC	
Methadone	40
Methadone Metabolite	38
Hydrocodone	20
Oxycodone	35
Propoxyphene (Darvon)	9
Norpropoxyphene	9
Meperidine (Demerol)	4
Fentanyl	7
Levorphanol	1

ANALGESICS - NON-NARCOTIC	
Acetaminophen	8
Tramadol (Ultram)	4
Salicylates	2

CARDIAC DRUGS	
Diltiazem (Cardizem)	3
Lidocaine	35
Metoprolol	2
Atenolol (Tenormin)	3
Verapamil (Calan)	5
Propranolol (Inderal)	1

ANTI-DEPRESSANTS	
Nortriptyline (Aventyl)	13
Amitriptyline (Elavil)	12
Trazodone (Desyrel)	2
Fluoxetine (Prozac)	14
Paroxetine (Paxil)	12
Sertraline (Zoloft)	7
Doxepin (Sinequan)	2
Citalopram (Celexa)	12
Venlafaxine (Effexor)	19
Mirtazepine (Remeron)	14
Bupropion (Wellbutrin)	11
Maprotiline (Ludiomil)	1

SEDATIVE-HYPNOTICS	
Phenobarbital	4
Butalbital	1
Secobarbital	2
Triazolam (Halcion)	1
Zolpidem (Ambien)	8

ANTIHISTAMINES	
Doxylamine	12
Chlorpheniramine	5
Promethazine (Phenergan)	14
Loratidine (Claritin)	1
Hydroxyzine (Vistaril)	5
Diphenhydramine (Benadryl)	48

DECONGESTANTS	
Pseudoephedrine	12

BRONCHODILATORS	
Ephedrine	14

* Benzoylecgonine is not a drug of abuse. It is a metabolite of cocaine and is generally present when cocaine is detected. In some cases, benzoylecgonine, but not cocaine, was found which indicated that there had been some exposure to cocaine.

TOXICOLOGY - MEDICAL EXAMINER'S CASES

July 2002 - June 2003

Drugs Detected, Continued

ANTICONVULSANTS	
Primidone (Mysoline)	1
Carbamazepine (Tegretol)	1
Valproic Acid	2
Gabapentin (Neurontin)	1
Clonazepam (Klonopin)	10

ANTIPSYCHOTIC AGENTS	
Quetiapine (Seroquel)	5
Haloperidol (Haldol)	2
Prochlorperazine (Compazine)	1
Clozapine (Clozaril)	1
Olanzepine (Zyprexa)	11

MISCELLANEOUS	
Clonidine (Catapres)	1
Carbon Monoxide	9
Acetone	7
Phenylpropranolamine	1
Carisoprodol	9
Bupivacaine	2
Isopropyl Alcohol	2
Ketamine	2
Cyclobenzaprine (Flexeril)	6
Methemoglobin	1
Dextromethorphan	7
Quinine	7

ANTI-ANXIETY AGENTS	
Diazepam (Valium)	31
Nordiazepam	35
Chlordiazepoxide (Librium)	4
Meprobamate	9
N-Desalkylflurazepam	2
Flurazepam (Dalmane)	4
Alprazolam (Xanax)	2
Temazepam (Restoril)	2

TOXICOLOGY CASES

July 2002 - June 2003

Year / Month	Medical Examiner	Forensic Toxicology*	Total Cases	Total Tests Performed
2002				
July - September	397	706	1,103	10,790
October - December	368	437	805	9,257
2003				
January - March	380	304	684	7,712
April - June	375	283	658	7,615
TOTALS	**1,520**	**1,730**	**3,250**	**35,374**

* Cases in which specimens were referred to the Medical Examiner's Toxicology Laboratory for forensic toxicological examination generally were criminal cases in which the presence of drugs was suspected either in the victim or suspect of the crime. DUI, 11550, management control, out-of-county and other miscellaneous cases are included in this tabulation.

ABUSE DRUGS

The role of abuse drugs in deaths during the 2002-2003 fiscal year is presented in this section. The four abuse drugs most commonly seen in Medical Examiner's cases - cocaine, heroin, amphetamines and PCP - will be examined. The number of cases in which these drugs were found either alone or in combination with other abuse drugs are presented in Table XXXIII, page 67. In drug-caused deaths, heroin was the most frequently observed drug of abuse both where drugs were present alone and when drugs were present in combination.

Distribution by Sex (Table XXXIV, page 68)

In deaths caused by abuse drugs (DC = drug caused), where the drugs were present either singly or in combination, 67-92% of the deceased individuals were males.

Distribution by Race (Table XXXIV, page 68)

White-Non-Hispanic (W-NH) - In drug-caused deaths where abuse drugs were present singly, the White non-Hispanic racial group predominated in deaths caused by amphetamines. In drug-caused deaths where abuse drugs were present in combination with other abuse drugs, the White non-Hispanic racial group predominated in deaths caused by all abuse drugs being studied.

Black/Non-Hispanic (B-NH) - In drug-caused deaths where abuse drugs were present singly, the Black non-Hispanic racial group predominated in deaths caused by cocaine.

White-Hispanic (W-H) - This racial group was most heavily represented in drug caused deaths where heroin was present alone.

Distribution by Age (Table XXXIV, page 68)

The lowest mean age was seen in drug-related deaths with PCP present singly (26.0 years) while the highest mean age was seen in drug-caused deaths with cocaine present alone (48.0 years).

Alcohol Involvement (Table XXXIV, page 68)

The presence of alcohol in the blood of abuse drug users (drugs present singly) where deaths were caused by drugs was most often associated with deaths caused by heroin alone (42%) and was least associated with deaths caused by cocaine alone (0%).

Deaths Involving Cocaine (Figure 25, page 69 and Table XXXV, page 70)

Cocaine **alone** was the *cause* of death in 5 cases by overdose. Cocaine alone was also present in 18 *drug-related* deaths (See Table XXXV) including 2 ruled to be by suicide and 13 ruled to be by homicide. Of the 18 *drug-related* deaths, 12 (67%) were due to gunshot or stabbing.

Cocaine **in combination** with other drugs was the *cause* of death in 62 cases by overdose. Cocaine in combination was also present in 25 *drug-related* deaths (See Table XXXV) including 3 cases ruled to be by suicide and 10 cases ruled to be by homicide. Of these 13 deaths, 8 (62%) were due to gunshot or stabbing .

The number of deaths due to cocaine over the last 10 fiscal years for which data are available is shown in Figure 25. It can be seen that the number of deaths due to cocaine is the lowest (of those years tabulated) since 1990-91.

Deaths Involving Heroin (Figure 25, page 69 and Table XXXVI, page 72)

Heroin **alone** was the *cause* of death in 12 cases by overdose. Heroin alone was also present in 2 *drug-related* deaths. The involvement of heroin alone in *drug-related* deaths was very low as compared to the involvement of cocaine in this type of death, both in number and manners of death.

Heroin **in combination** with other drugs was the *cause* of death in 65 cases by overdose. Heroin in combination was present in 18 *drug-related* deaths, 4 (22%) of which were due to gunshot or stabbing.

The numbers of deaths due to heroin over the last 25 fiscal years are shown in Figure 27, page 74. It can be seen that the number of deaths due to heroin is the lowest (of those years tabulated) since 1991-92.

Deaths Involving Amphetamines (Figure 25, page 69 and Table XXXVII, page 73)

Amphetamines **alone** were the *cause* of death in 6 cases by overdose. Amphetamines *alone* were also present in 7 *drug-related* deaths, 2 of which (29%) were the result of gunshot.

Amphetamines **in combination** with other drugs were the *cause* of death in 20 cases by overdose. Amphetamines in combination with other drugs were present in 10 *drug-related* deaths, 5 of which (50%) were the result of gunshot or stabbing.

Abuse Drugs Present in Violent Deaths (See Figure 26, page 71)

Cocaine is the drug of abuse seen most frequently in vehicular deaths and in those by homicide.

SAN FRANCISCO MEDICAL EXAMINER'S CASES

TABLE XXXIII. ABUSE DRUGS

Abuse Drugs Present Alone

Drug	Drug Caused Deaths*	Drug Related Deaths	Role Unclear	Incidental Finding
Cocaine alone	6	18	12	2
Heroin alone	12	2	3	1
Amphetamines alone	7	7	4	3
PCP alone	0	1	0	0

Abuse Drugs Present in Combination with Other Drugs

Drug	Drug Caused Deaths*	Drug Related Deaths	Role Unclear	Incidental Finding
Cocaine in combination	62	25	9	4
Heroin in combination	65	18	4	5
Amphetamines in combination	21	11	8	3
PCP in combination	0	2	0	0

*NOTE: Drug *caused* deaths are not all due to drug overdoses.

TABLE XXXIV. ABUSE DRUGS - INCIDENCE BY SEX, RACE, AGE, AND ALCOHOL INVOLVEMENT

Drugs Present Singly

Drug	SEX		RACE			Mean Age	% With Alcohol	# Positive (# Tested)	Ave. Alc. Conc. (g%)
	% M	% F	% W-NH	%W-H	%B-NH				
Cocaine - DC*	67	33	17	0	83	48.0	0	0 (of 6)	-
Cocaine - DR**	88	12	11	29	56	33.3	35	6 (of 17)	0.14
Heroin - DC*	92	8	50	33	17	39.0	42	5 (of 12)	0.15
Heroin - DR**	100	0	100	0	0	27.0	0	0 (of 2)	-
Amphet. - DC*	86	14	71	14	0	41.8	29	2 (of 7)	0.16
Amphet. -DR**	71	29	86	0	14	31.1	57	4 (of 7)	0.11
PCP – DC*	-	-	-	-	-	-	-	-	-
PCP – DR**	100	0	0	100	0	26.0	0	0 (of 1)	-

Drugs Present in Combination

Drug	SEX		RACE			Mean Age	% With Alcohol	# Positive (# Tested)	Ave. Alc. Conc. (g%)
	% M	% F	% W-NH	% W-H	%B-NH				
Cocaine - DC*	79	21	63	8	24	42.2	37	23 (of 62)	0.13
Cocaine - DR**	84	16	56	16	28	37.7	29	7 (of 24)	0.11
Heroin - DC*	77	23	68	6	23	42.0	42	27 (of 65)	0.13
Heroin - DR**	78	22	72	6	22	34.9	12	4 (of 18)	0.23
Amphet. - DC*	76	24	76	5	14	40.0	15	3 (of 20)	0.06
Amphet. - DR**	100	0	45	18	36	36.0	45	5 (of 11	0.08
PCP+ - DC*	---------- NONE ----------								
PCP. - DR**	50	50	50	50	0	47.5	50	1 (of 2)	0.13

* DC = Drug Caused ** DR = Drug Related

DEATHS DUE TO AMPHETAMINES, COCAINE AND HEROIN

BY FISCAL YEAR

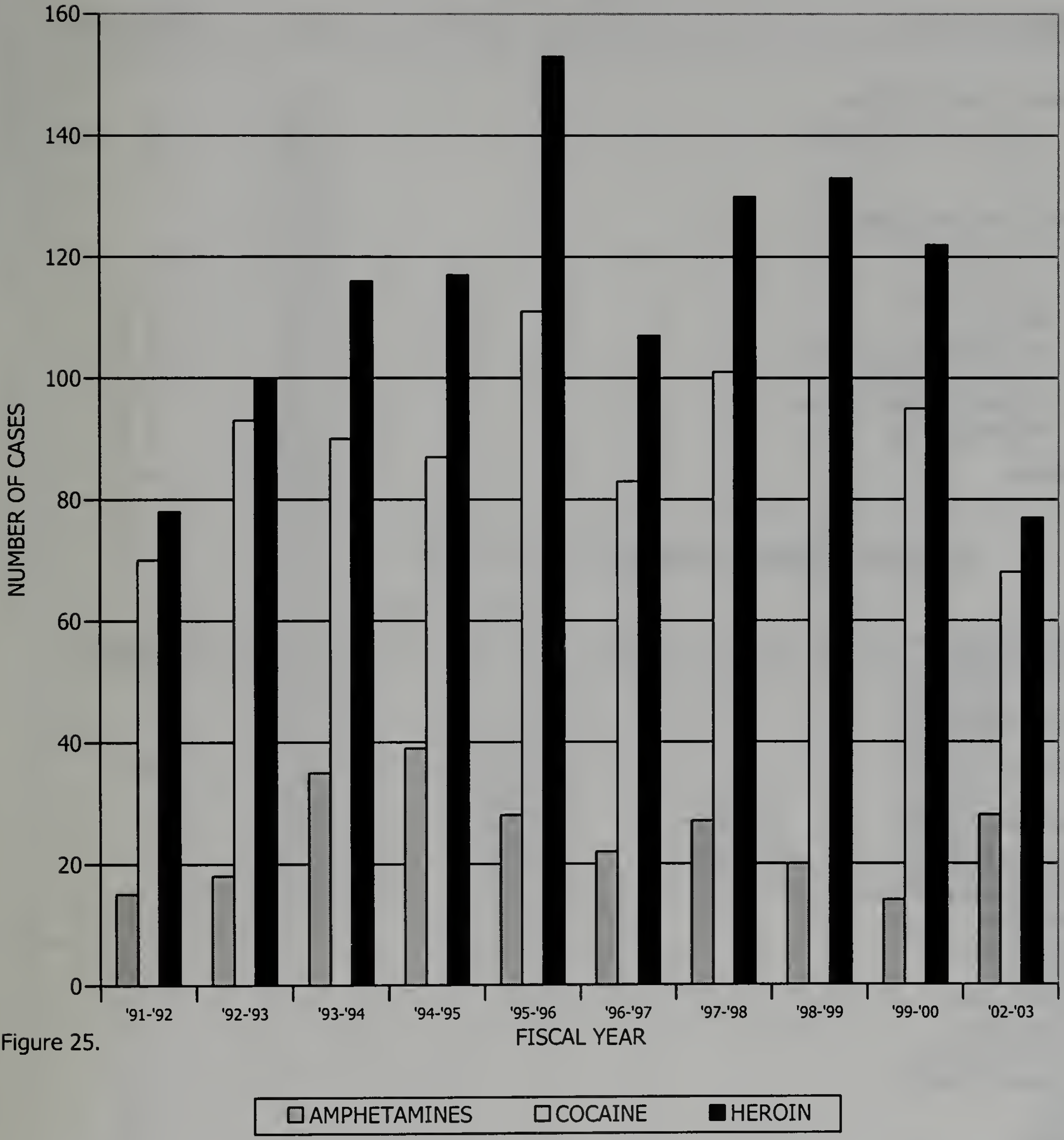

Figure 25.

TABLE XXXV. DEATHS INVOLVING COCAINE

COCAINE PRESENT ALONE

	Manner of Death					
CAUSE OF DEATH	**ACC**	**SUI**	**HOM**	**NC**	**UND**	**TOTALS**
Drug Caused Deaths						
Intracerebral Hemorrhage	1	0	0	0	0	**1**
Overdose	5	0	0	0	0	**5**
Drug Related Deaths						
Endocarditis	0	0	0	1	0	**1**
Gunshot Wound	0	0	11	0	0	**11**
Hanging	0	1	0	0	0	**1**
Intracerebral Hemorrhage	0	0	0	2	0	**2**
Jump – G.G. Bridge	0	1	0	0	0	**1**
Multiple Traumatic Injuries	0	0	1	0	0	**1**
Stabbing/Cutting	0	0	1	0	0	**1**
TOTALS	**6**	**2**	**13**	**3**	**0**	**24**

COCAINE IN COMBINATION WITH OTHER DRUGS

	Manner of Death					
CAUSE OF DEATH	**ACC**	**SUI**	**HOM**	**NC**	**UND**	**TOTALS**
Drug Caused Deaths						
Overdose	60	2	0	0	0	**62**
Drug Related Deaths						
Bronchopneumonia	0	0	0	4	0	**4**
Coronary Artery Disease	0	0	0	1	0	**1**
Drug Abuse	0	0	0	2	0	**2**
Gunshot Wound	0	0	5	0	0	**5**
Hanging	0	2	0	0	0	**2**
Hepatic Failure	0	0	0	1	0	**1**
Jump-Building	0	1	0	0	0	**1**
Myocardial Fibrosis	0	0	0	1	0	**1**
Myocardial Ischemia	0	0	0	1	0	**1**
Sepsis	0	0	0	2	0	**2**
Stabbing	0	0	3	0	0	**3**
Traumatic Injuries	0	0	2	0	0	**2**
TOTALS	**60**	**5**	**10**	**12**	**0**	**87**

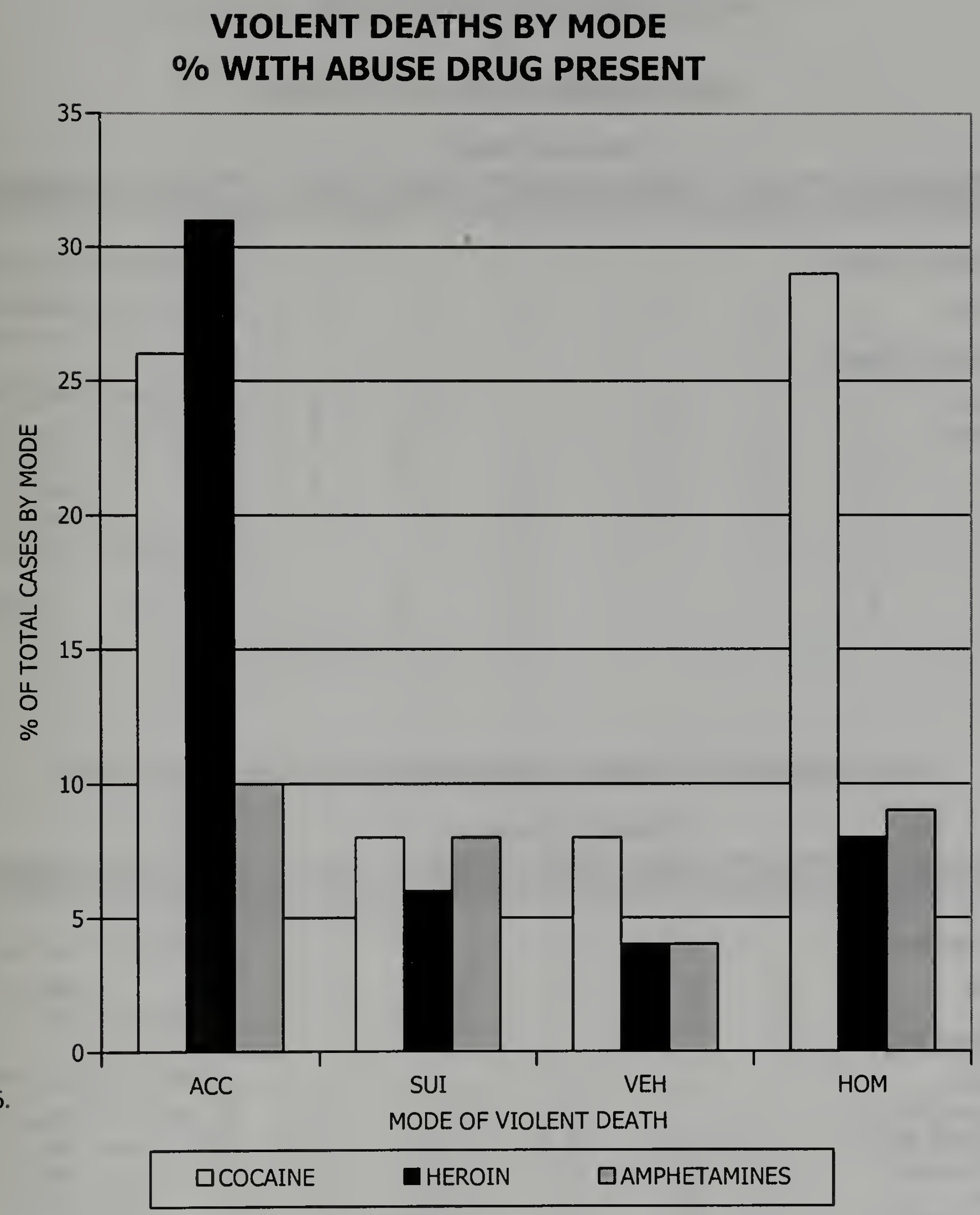
VIOLENT DEATHS BY MODE
% WITH ABUSE DRUG PRESENT
% OF TOTAL CASES BY MODE
35
30
25
20
15
10
5
0
ACC
SUI
VEH
HOM
MODE OF VIOLENT DEATH
☐ COCAINE
■ HEROIN
▨ AMPHETAMINES

Figure 26.

TABLE XXXVI. DEATHS INVOLVING HEROIN

HEROIN PRESENT ALONE

Manner of Death

CAUSE OF DEATH	ACC	SUI	HOM	NC	UND	TOTAL
Drug Caused Deaths						
Overdose	12	0	0	0	0	**12**
Drug Related Deaths						
Hanging	0	1	0	0	0	**1**
Stabbing	0	0	1	0	0	**1**
TOTALS	**12**	**1**	**1**	**0**	**0**	**14**

HEROIN PRESENT IN COMBINATION WITH OTHER DRUGS

Manner of Death

CAUSE OF DEATH	ACC	SUI	HOM	NC	UND	TOTAL
Drug Caused Deaths						
Overdose	62	3	0	0	0	**65**
Drug Related Deaths						
Aspiration	1	0	0	0	0	**1**
Bronchopneumonia	0	0	0	4	0	**4**
Chronic Drug Abuse	0	0	0	1	0	**1**
Gunshot Wound	0	1	2	0	0	**3**
Hanging	0	2	0	0	0	**2**
Myocardial Fibrosis	0	0	0	1	0	**1**
Myocardial Ischemia	0	0	0	1	0	**1**
Sepsis	0	0	0	2	0	**2**
Stabbing	0	0	1	0	0	**1**
Traumatic Injuries	0	0	2	0	0	**2**
TOTALS	**63**	**6**	**5**	**9**	**0**	**83**

TABLE XXXVII. DEATHS INVOLVING AMPHETAMINES

AMPHETAMINES PRESENT ALONE

CAUSE OF DEATH	Manner of Death ACC	SUI	HOM	NC	UND	TOTAL
Drug Caused Deaths						
Intracerebral Hemorrhage	1	0	0	0	0	**1**
Overdose	6	0	0	0	0	**6**
Drug Related Deaths						
Gunshot Wound	0	0	2	0	0	**2**
Hanging	0	1	0	0	0	**1**
Jump-Other	0	1	0	0	0	**1**
Motor Vehicle	1	0	0	0	0	**1**
Ruptured Aneurysm	0	0	0	2	0	**2**
TOTALS	**8**	**2**	**2**	**2**	**0**	**14**

AMPHETAMINES PRESENT IN COMBINATION WITH OTHER DRUGS

CAUSE OF DEATH	Manner of Death ACC	SUI	HOM	NC	UND	TOTAL
Drug Caused Deaths						
Overdose	15	5	0	0	0	**20**
Bronchopneumonia	1	0	0	0	0	**1**
Drug Related Deaths						
Bronchopneumonia	0	0	0	2	0	**2**
Coronary Artery Disease	0	0	0	1	0	**1**
Gunshot Wound	0	0	2	0	0	**2**
Jump-Building	0	1	0	0	0	**1**
Traumatic Injuries	0	0	1	0	0	**1**
Stabbing	0	0	3	0	0	**3**
TOTALS	**16**	**6**	**6**	**3**	**0**	**31**

DEATHS DUE TO HEROIN

BY FISCAL YEAR

DRUGS ALONE OR IN COMBINATION

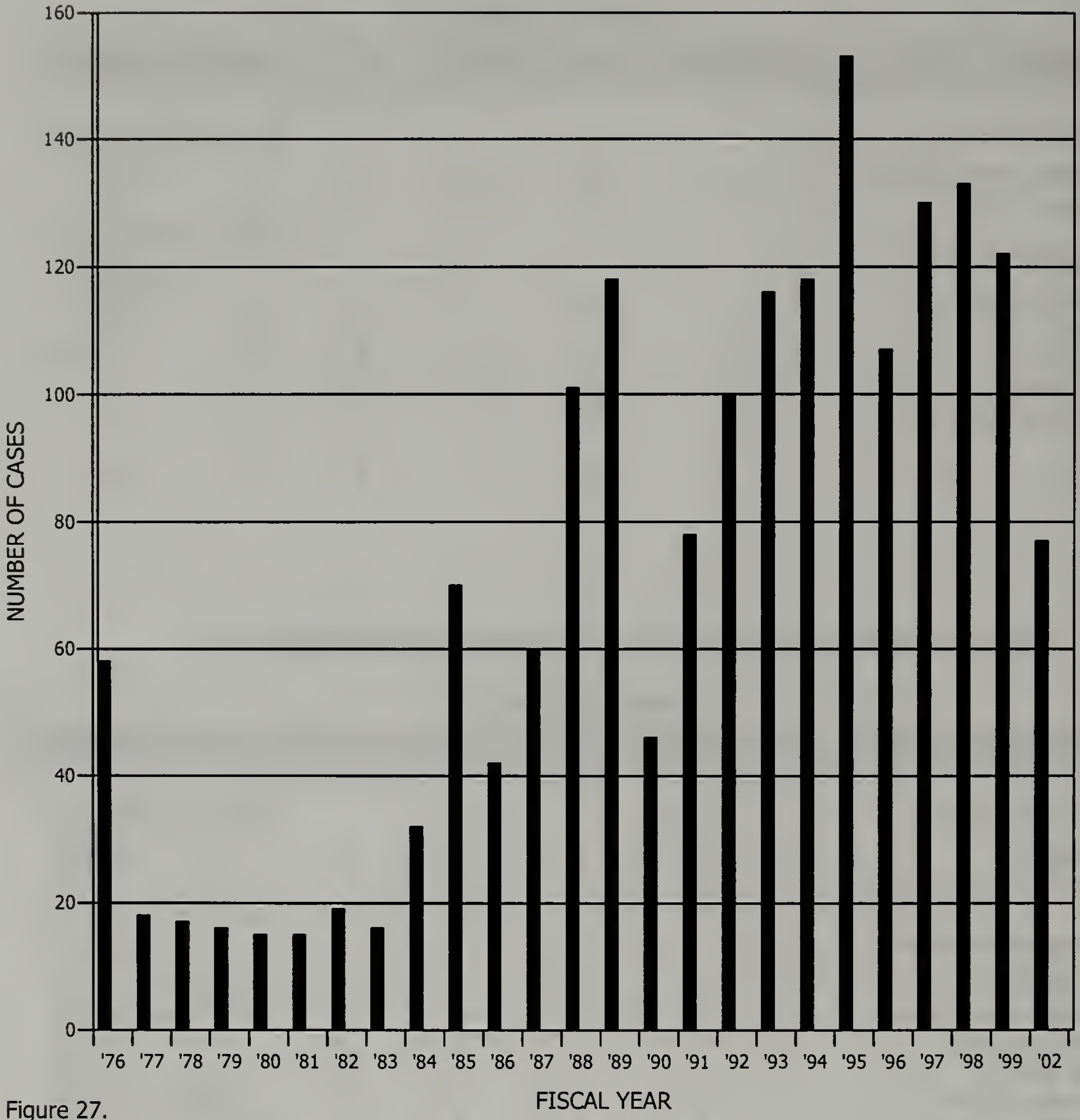

Figure 27.

GLOSSARY

ALKALOID OF MORPHINE GROUP	Typically referred to as morphine-type alkaloid, it is the chemical substance found in body fluids after the injection of heroin or other drugs derived from opium.
AUTOPSY	A scientific dissection of the human body to determine the cause and nature of death in order to detect public health hazards, determine the method or type of death in homicides and improve the level of medical care in the community. In some cases, showing that no injury or wrongdoing was present is of great emotional and stabilizing value to the family.
FORENSIC PATHOLOGY	The specialty field of medicine involving the application of medical and pathology principles in determining the cause and manner of sudden, unexpected, and medically unattended deaths. This includes the type and nature of injury, public health hazards, type or nature of homicide weapon, the relation of injury to death and interpreting other factors for the court. These data are prepared and presented to the judicial system or public health interests in keeping with the best available knowledge
MEDICAL EXAMINER	A physician specifically trained in forensic pathology who is responsible for investigating and determining the cause and manner of sudden or unexpected death
MODE OF DEATH	Indicates the manner of death, such as natural, accident, suicide or homicide, and is to be distinguished from cause of death, which is purely a medical determination
MODE UNDETERMINED	With the cause of death determined, investigative data do not clearly support one of two possible modes and either one is possible without prejudice
PATHOLOGY	That branch of medicine which deals with the essential nature of disease, especially in the structural or functional changes in tissues, organs or systems of the body causing disease. It involves the diagnosis of disease by microscopic or chemical analysis
SEROLOGY	That branch of pathology which deals with the analysis of blood and body fluids. Blood types for identification, exclusion of a suspect or judicial purposes are examples of the use in this office
TOXICOLOGY	The scientific study of poisons, their detection, actions and treatment. The relationship of drug levels to emotional or personality change, behavioral or reasoning ability are frequent decisions based on these data
TOXICOLOGY NOT VALID OR ELIMINATED	This term indicates that the deceased lived long enough after the injury to have eliminated some or all toxic agents from the body

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